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The Book of Knowledge

The Children's Encyclopædia

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Volume X.

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This is a short guide only to the principal contents of this volume. It is not possible to give the titles of all the Poems and Rhymes, Legends, Problems, colour pages, questions in the Wonder Book, and many other things that come into the volume; but in all cases are given the pages where these parts of our book begin. The full list of these things comes into the big index to the whole work.

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THE HISTORY OF OUR LAND

WHEN we speak of the United States we mean, of course, the middle section of North America. Yet there is much more territory under the flag than when your parents studied geography. During the past twenty years our country has become one of the world powers with possessions in almost every sea. Some are in the frozen North, while in others it is always summer. Some are inhabited by Eskimos dressed in furs and skins, and Indians, while in others there are brown Malays and dwarf Negritos who wear almost no clothes. Some of our new cousins are peaceful folk, while others are fierce savages, who take pleasure in nothing but fighting. Some of these lands we have gained by purchase, some by war, and some by request of the inhabitants, and others because no one else seemed to want them.

OUR FOREIGN POSSESSIONS AND HOW WE GOT THEM

CONTINUED FROM 1837

YOU have learned how the people of the thirteen old states on the Atlantic climbed the mountains, floated down the rivers beyond, and then crossed the Mississippi River, the "Great Father of the Waters." Without halting, the wagon trains made their toilsome way over the plains, reached the summit of the Rocky Mountains, and, at last, came to the Pacific. By purchase, by exploration and by conquest, we gained the territory which we now know as the United States.

SOME OF OUR POSSESSIONS IN MANY SEAS

For a considerable time this was all, but if you now look in the great atlas in the schoolroom or on your father's desk, you will find that our country holds much territory separated from the states of the Union. In the list you may find the following: Alaska, Aleutian Islands, Baker Island, Canal Zone, Guam, Hawaiian Islands, Howland Island, Marcus Island, Midway, Wake and Johnstone Islands, Philippine Islands, Porto Rico, and Tutuila.

Some of these names, I am sure, you have never heard before. Perhaps you remember when others became possessions of our country, or at least you can remember when Admiral Dewey came home from the Philippines, or when the soldiers came home from Cuba, or when some friend went to Panama to help dig the great Canal. Then too you remember that we sent another army to Cuba some time ago which came back a little while later. Yet Cuba is not on our list. We shall see what we have to do with that country soon.

ALASKA AND THE ISLANDS AROUND IT

The first of our possessions in size and importance is Alaska and the Aleutian Islands, which are really a part of it. The area is about 590,000 square miles, or between one-fifth and one-sixth the size of the United States, and about the size of the German Empire, France and Spain taken together. It cost when we bought it from Russia about two cents an acre.

It is a wonderful country of high mountains, great plains and broad rivers. From some of these mountains, great ice rivers, or glaciers, about which you read on page 2515, slowly slide down to the sea. There huge sections break off and become icebergs. When your editor studied geography in school, the book said that Mt. St. Elias (over 18,000 feet) was the highest mountain in North

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America. Your geographies tell you that Mt. McKinley (over 20,000 feet), which had not been measured or even discovered until thirty years ago, is the highest.

Along the coast are more than eleven hundred islands, known as the Alexander Archipelago. Some of these are high mountains with great forests on their sides. Stretching to the west more than 1,000 miles beyond the mainland and reaching almost to Asia are the Aleutian Islands.

The great territory has been known to white men less than two hundred years. In 1728, Vitus Bering, in command of a Russian ship, discovered the mainland and the narrow band of water between it and Russia, which now bears his name. He again explored the coast in 1741, and about twenty-five years later, Captain Cook, the English sailor of whom you have read so much in our book, also sailed along the coast.

THE RUSSIAN FUR COMPANY MANAGES THE COUNTRY

Not until 1784 was a small trading settlement made. Later, a few other little settlements were made to trade with the Indians for furs, and Sitka became a busy town. There were brass and iron foundries and machine shops, and a shipyard where steamships were built.

The fur company was not always well managed, much money was wasted, and many of the white men moved away. When the United States finally got possession only a few hundred white men were living in the whole country, and the story of the past had been almost forgotten. A few Eskimos lived in the far North, and some Indian tribes were scattered over the South, but much of the territory was not inhabited at all.

It had never paid Russia, and so that country sold it to the United States in 1867, for $7,200,000. A few people in California and Oregon thought that the furs and the fisheries would be valuable to the country, but nearly every one else laughed at the purchase of polar bears and icebergs.

So little attention was paid to the country that the United States did not even provide any sort of government until seventeen years later, though it was supposed to be under United States laws. During the year seal and whale hunters made camps on the islands stretching out toward Asia, and a few fishing vessels touched the coast. Trappers and hunters wandered through a part of the country, but there were hundreds of square miles never seen by white men.

GOLD IS DISCOVERED AND A RUSH BEGINS

Though stories of finding gold often came down the coast to Oregon and California, they did not cause much excitement until 1896. Then it was told that rich finds had been made on the Yukon River in the region known as the Klondike in Canada, and thousands of people hurried there. Gold was also found on the American side, and in 1898 still richer deposits were found at Nome on the western coast.

At Nome the richest finds were on the beach, where the precious metal had been washed from the hills. Here men toiled hour after hour, digging out the frozen sands, from which they washed the shining grains. One crippled old miner, who had not been able to follow the rush far into the land, washed out $3,000 in twenty days.

When the news of all these discoveries was carried over the world, another rush like that to California fifty years before occurred. Every old steamboat on the Pacific coast was pressed into service, and carried struggling crowds toward the golden North. Once landed, on foot, or with sledges drawn by dogs, they strove to make their way over the hills and across the streams toward the goldfields. There were no roads, only paths called trails, where the snow had been beaten down by the feet of men and the runners of sledges.

THE DANGERS AND HARDSHIPS OF THE JOURNEY

Many died from cold and hunger on the way. Wolves took others who strayed from the trail. Only the strong could endure the hardships of the journey and the privations of the life. But as others came, the trails

ROUGHING IT IN ALASKA

Sheep Camp was one of the early camps set up by the gold diggers of Alaska. Here we see the residence and office of the principal doctor in the place. Though trees grow near, no one had time to build regular houses, and no one was willing to work for wages when he might be digging for gold.

If you will get the map of Alaska you will find the Allenkakat River just a little north of the centre. Fc several years, this boy, Will Campbell, was the only white boy in the whole region. He has harnessed h puppies just as if they were full-grown dogs, and is teaching them to draw the sled, which will be the regular business when they are older.

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EVERYDAY LIFE IN ALASKA

Here we see a seeker of gold, or prospector, as he is called. He has made a fire to thaw the frozen ground so that he can dig. Much gold has been washed from the hills into the low places.

The Indians of Alaska are less savage than the former inhabitants of the United States. Many of them are willing to work, and have adopted many of the white men's ways. They have also adopted his bad habits, and many are suffering.

The gradual disappearance of whale, walrus, and seal has caused much suffering among the Eskimos. Our government is trying to introduce the Siberian reindeer to furnish food, clothing and, a means of travel.

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were made wider, and some roads in the southern part were made passable for horses. Railroads were pushed into the interior. Steamboats now run on the Yukon and some of the other rivers. Further exploration has shown large deposits of coal, iron, copper and petroleum, which will soon be opened up.

Not all of Alaska is bitterly cold. The warm winds from the Pacific bring moisture to the coast, and the high mountains shut off the cold Arctic winds. Rain falls on more than two hundred days in the year. Great forests are seen, and the meadows furnish excellent hay. In much of the country our ordinary vegetables can be raised during the short hot summer, and some grain also grows. But in the interior the temperature is often 50° below zero during the winter, and a few feet down, the ground is always frozen. We shall tell you more of this wonderful country in another place.

ANOTHER POSSESSION WHERE IT IS ALWAYS SUMMER

Far to the South of cold Alaska are some Pacific islands where it is always summer. These are the Hawaiian Islands, which were annexed to the United States at the request of the inhabitants in July, 1898. There are seven of these upon which people live, one which was once inhabited though now deserted, and twelve smaller islands. The natives visit these to gather the eggs of the sea birds.

All the islands taken together are not large, as they contain only about 6,500 square miles. That is, all together they are larger than Connecticut, but smaller than New Jersey. The largest is Hawaii, but Oahu, which contains Honolulu, the chief city, has more people.

These islands were made, the wise men tell us, by volcanoes which pushed up from the sea bottom and poured out their lava. This decaying lava makes a rich soil, and since there is much rain, everything grows like magic. Some of the volcanoes are not dead. Kilauea on Hawaii is the largest active volcano in the world. The crater, that is, the bowl-shaped top of the mountain, is about nine miles around, and in the centre is a great lake of melted lava, which rises and falls like water in a reservoir. At night the sight of this red-hot, quivering mass is one of the most wonderful sights to be seen anywhere.

EARLY EXPLORERS OF THE ISLANDS

These islands had been discovered by Spanish ships before the year 1550, but little notice was taken of them until Captain Cook, of whom you read on page 1458, visited them in 1778. He called them the Sandwich Islands, and on his second visit quarrelled with the natives, who killed him. Another brave British explorer, George Vancouver, of whom you have read, left some cattle on the islands a few years later, and taught the people how to build boats.

American missionaries went to the islands in 1820, and soon the leading natives, who belong to the brown race, called themselves Christians. Many of the people still followed their heathen gods, and it is said that some do to the present day. The royal family died out in 1872, and Kalakaua was elected King. He was a very bad ruler and tried to restore the idols and to take away the liberties from the people.

THE PEOPLE DRIVE THEIR QUEEN FROM HER THRONE

On his death in 1891, his sister Liliuokalani tried to follow in his footsteps. By this time there were many white people on the islands. Some of them were the children and grandchildren of the missionaries, and others had gone there to trade. They put the Queen off the throne in 1893, declared themselves under the protection of the United States, and asked to be joined to that country. This was not allowed at the time, but they refused to allow the Queen to become their ruler again, and governed themselves as a republic. At last, in 1898, they were joined to the United States and are now governed like the territories once were and have a delegate in Congress who may speak but who has no vote.

THE WHITE MAN'S WAYS PROVE FATAL

Since they were annexed, wealth has increased. The principal crop is sugar cane, though pineapples and bananas are grown for export. The greatest trouble is the scarcity of labour. The white man's whiskey, as well as the white man's Bible, came in with the trading ships, and many of the natives became drunkards. Then too the white man's diseases have caused the death of many. It always happens among uncivilised people that a new disease does more harm than it does among the people who are accustomed to it. The natives are now dying out and only 30,000 of them are left. Once there were five or six times as many.

Many whites of Portuguese descent were brought in to work on the sugar plantations, but now they do work which is better paid. Then Chinese were brought in and many of them have become prosperous farmers. They have in many cases married the native women and their children are often good citizens. The Japanese came next, but most of them stayed only a few years before returning to Japan, but their places were taken by others.

The Japanese have made much trouble for the owners of the plantations and for the officers of the law. A few years ago, it is said, they formed a plot to capture the islands and turn them over to Japan. That country would find the islands very useful as a stopping place for her navy.

THE LEPER ISLAND OF MOLOKAI

Perhaps you have heard of the leper island of Molokai. Leprosy is a terrible disease which slowly eats away the skin and flesh. It is said that it was unknown among the islands until brought from China about sixty years ago. Since 1865 all lepers have been sent to the island of Molokai, where they are well treated, have good houses and abundant food. A well person may go here with a loved one, but may never return, and in many cases is attacked by the disease.

It was here that Father Damien, about whom you read on page 65, lived and died. Now there are three churches on the island and a home for boys and another for girls. These homes are supported and managed by a Catholic Sisterhood of American women. Every effort is made by the government and the churches to make life pleasant, but after all it is a living death.

Life on the other islands is pleasant in many ways. The climate is delightful, game and fish are plentiful, fruits and vegetables of many kinds are grown. One who has once lived on these islands always desires to return.

The natives are fond of games and sports of many kinds. Even the babies are good swimmers, and a favourite amusement is riding on a narrow board over the surf, as it beats upon the shores. Nature furnishes food, little clothing is needed, and therefore most of the natives refuse to do much work.

ANOTHER GROUP OF ISLANDS AND THE SAVAGE INHABITANTS

Further to the south and further west is another group of islands over which our flag floats. These are the Philippines, named for Philip II of Spain, and first seen by Magellan, as you were told on page 60. There are many hundreds of them, but two are much larger than all the others taken together. Nine more have more than 1,000 square miles each, while some are only points of rock. All together they have about the same area as Virginia, North Carolina and South Carolina. The population is now about 8,000,000 of which hardly 20,000 are white.

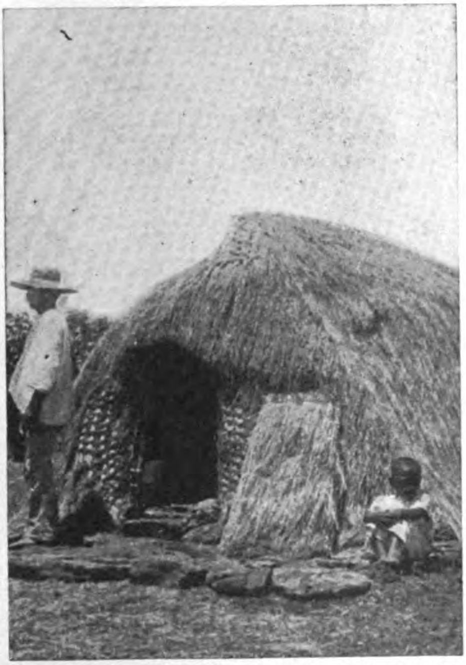
There are many high mountains with about fifty volcanoes. Twenty of these are alive. Earthquakes are frequent, and in many places the surface of the land is either rising or falling. The land is fertile and great forests cover a large part. There are two seasons, the wet and the dry, and during the first some rain falls almost every day.

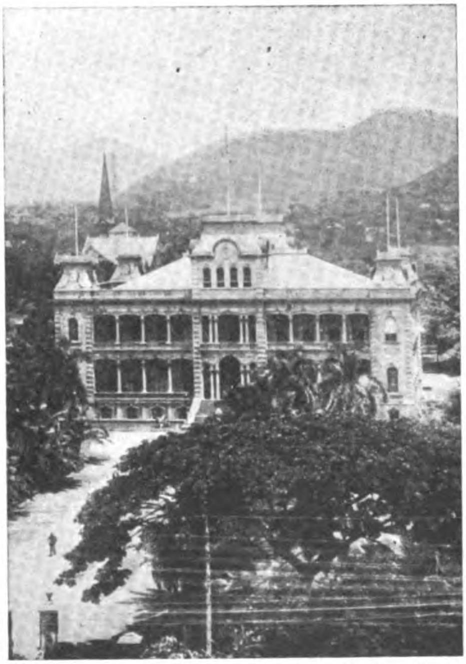
NATIVES BLACK AND BROWN; PEACEABLE AND SAVAGE

The first inhabitants were black, the wise men tell us, and from them the Negritos are descended. The Malays then invaded the islands, and after a time a second invasion drove the first into the hills. From this first invasion come the Igorrotes and other pagan tribes. These are the famous head-hunters. Their conquerors became Christians, and the seven great tribes of them are called Filipinos. Then a

THE BEAUTIFUL HAWAIIAN ISLANDS

The Hawaiians believe that they have the most beautiful country in the world. On the left is a rice field, and on the right is a corner of a banana plantation. The banana is one of the chief articles of food of the natives, and produces very heavy crops.





The grass hut on the left is the kind of house in which thousands live. In striking contrast is the old palace of the kings in Honolulu, now used as the government house by the governor and other officers.

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third Malay invasion arrived, but this time it was the Mohammedan Malays, and from them are descended the fierce Moros. So one can say that the native inhabitants are the Negritos, the pagan Malays, the Mohammedan Malays and the civilised Malays.

The Moros would have conquered the islands, if the Spanish had not come in 1565, to take possession. Not all the islands were conquered, but the Spanish tried to make all the people Christians. The Chinese and the Dutch tried to capture the islands but failed. England took them during the French and Indian War about which you read on page 882, but gave them back at the end of the war.

THE BATTLE OF MANILA BAY WON BY COMMODORE DEWEY

You may read in another place of what we call the Spanish War. When the United States declared war against Spain, Commodore Dewey with an American fleet sailed into Manila Bay, and destroyed the Spanish fleet on May 1, 1898. A few weeks afterward the city itself surrendered. When peace was finally made the United States kept the islands, but in return paid Spain $20,000,000.

Just at this time the Filipinos under Aguinaldo had been fighting for their freedom. When they found that the United States did not intend to grant their independence at once, they revolted against this country, and were not conquered for several years. Even yet some of the wild tribes are ready to fight at a moment's notice.

The United States has announced that when the people are prepared for it, independence will be granted, but many of the Filipinos think they are ready now. The governor is appointed by the President of the United States and is assisted by Commissioners appointed by the same officer. The people elect an assembly which has the right to pass laws on many subjects, but the Commission and the governor must also agree. William H. Taft, now our President, was the first governor, and did much to start the machinery of government to running smoothly.

WHAT THE ISLANDS PRODUCE, AND WHY THEY DO NOT PRODUCE MORE

The resources of the islands are very great. Gold, iron, copper, sulphur, petroleum and marble are found in large quantities. The timber is very valuable and includes many kinds so hard that they cannot be cut by ordinary saws. Some of these take a high polish. There are thousands of cocoanut palms, as you see in our pictures.

The most important article sent out from the islands is hemp, about which you are told in another place. Next comes sugar from the sugar cane. Good coffee is grown and the cocoa tree is also found. Philippine tobacco finds many admirers. Our Indian corn grows well, rice is a good crop and sweet potatoes form a large part of the food of the people. The soil is rich, and if properly cultivated would produce even larger crops. White men have trouble in working in the climate, however, and the natives work as little as possible.

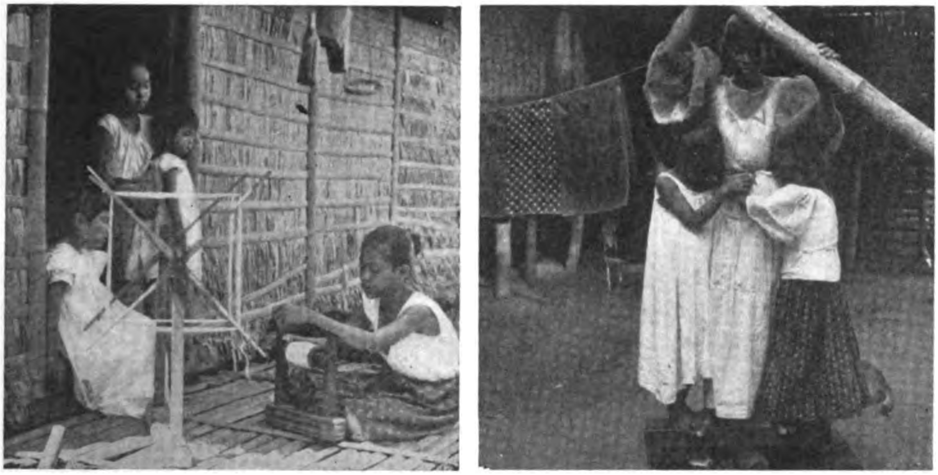
Since a very little labour will produce enough for their simple wants, they take many holidays. They do not like to use new tools. If you look at the plough in one of our pictures you will see that it is only a forked stick. The greater number of the Filipinos have little desire to improve their condition.

SPAIN'S FAILURE IN THE WEST INDIES

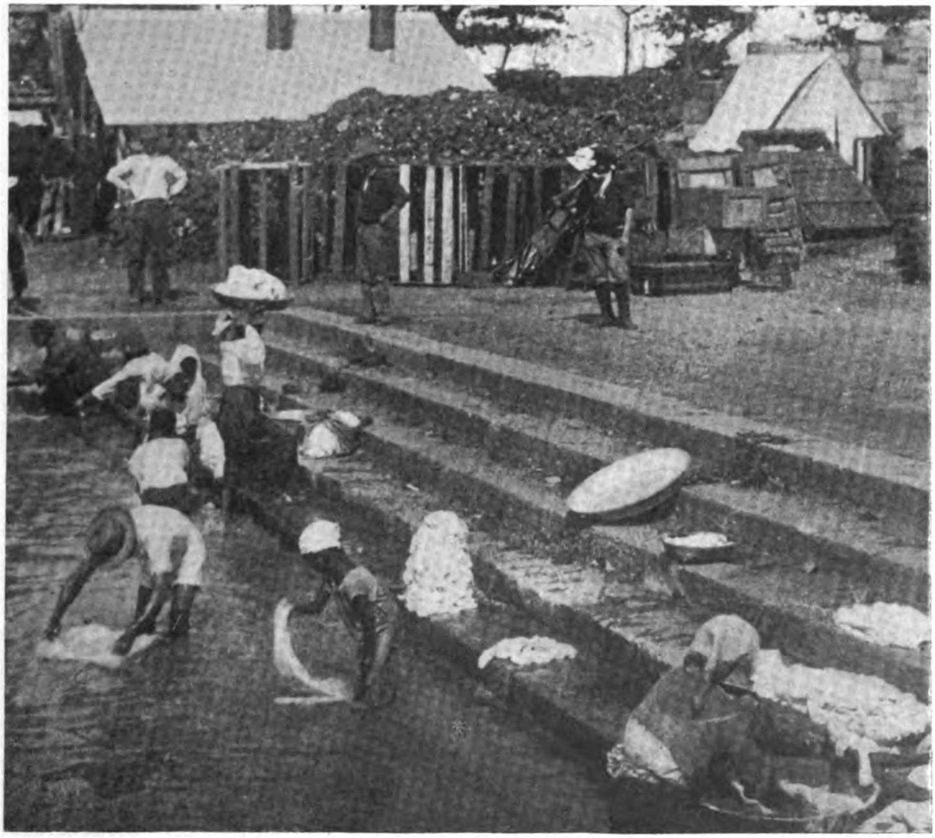
Now we turn to the Atlantic Ocean, where are other possessions of our country, also gained in the Spanish War. But let us see first what this war was. Spain at the end of the nineteenth century still controlled Cuba and Porto Rico, but the Cubans were very restless. Many times they revolted, and the revolts were put down, but only for a little while.

In 1895 a fresh rebellion began. Spain had learned nothing by experience and attempted to crush this revolt by strong measures. General Weyler, who had been Governor-General of the Philippines, was put in charge, and began to burn the houses and crops, and to drive the people into the towns where they were kept prisoners. President Cleveland objected, but was told that he must not interfere. The anger of the

DOMESTIC SCENES ON ISLAND OF LUZON



The girl is winding hemp on a reel in the same way that it has been done for 500 years. The second group is ironing clothes. The garment is wrapped around the roller, and by see-sawing is made smooth.



This scene in Manila shows one of the public washing places in the Pasig River. The river is not very clean, and naturally, the clothes are not either. Notice the United States soldier guarding government supplies in the background.

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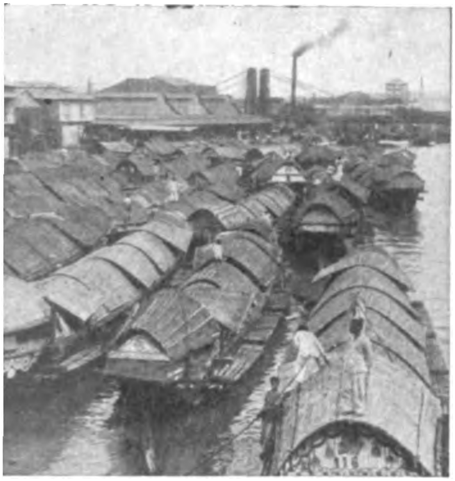
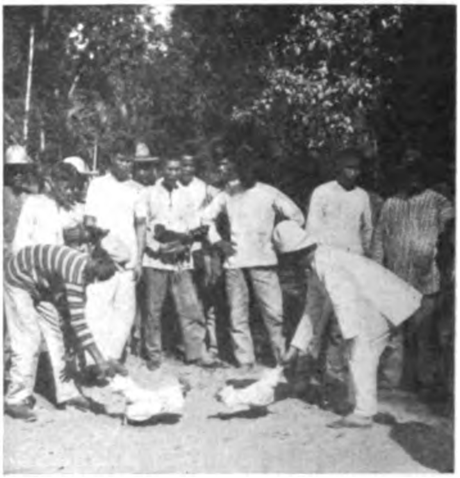
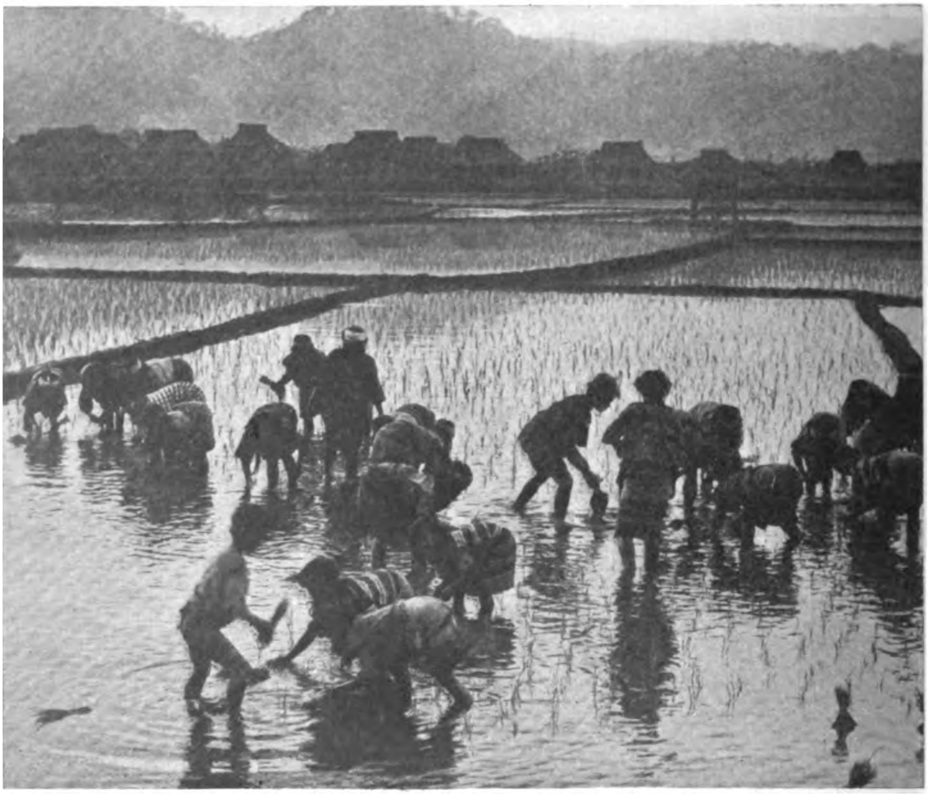
WORK AND PLAY IN THE PHILIPPINES





Thousands of the people of Manila live in houseboats moored in the Pasig River. Cockfighting is the chief amusement of the people, and on holidays hundreds tuck their pet cocks under their arms, and hunt for a chance to fight.



The chief food of the Filipino is rice, and here we see how it is planted. Young stalks, a few inches high, which are grown from seed, are planted in the mud under water. These are Igorrote boys.

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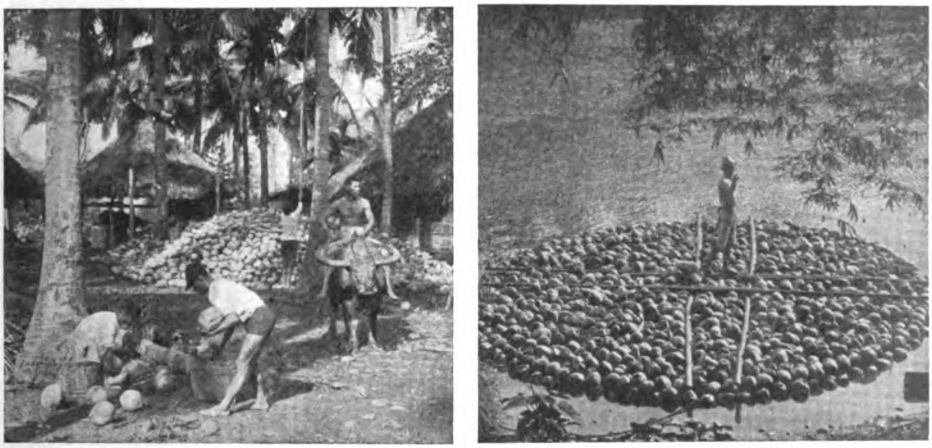
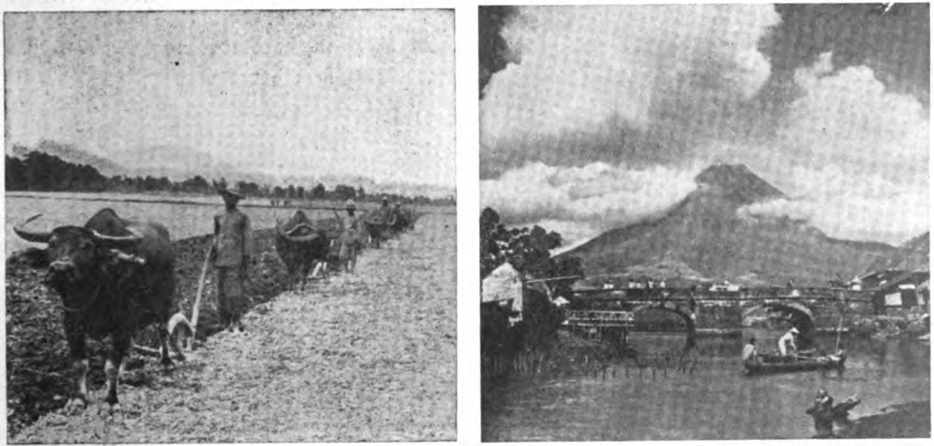
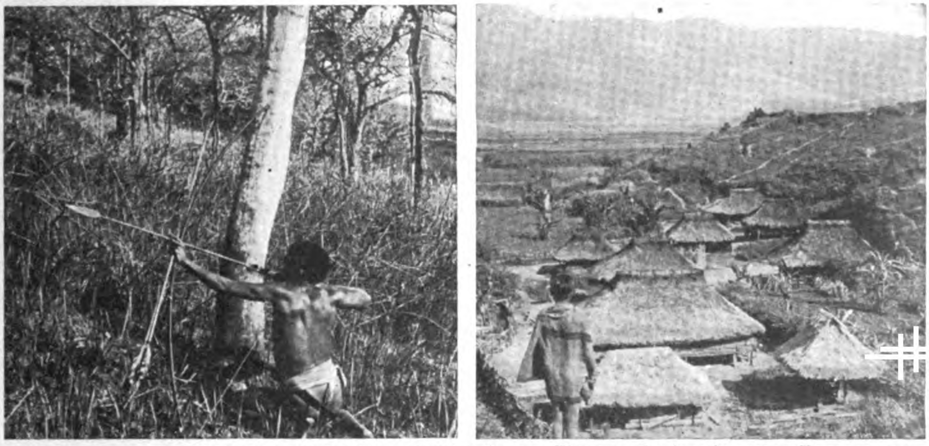
SCENES IN THE PHILIPPINES



The cocoanut palm furnishes food, drink, oil, timber, and rope. A tree produces about 100 nuts a year. Here you see a grove with the nuts piled up ready for market, and a raft of them on the way to Manila.



The methods of farming have not changed for centuries. The buffalo or carabao is the chief beast of burden. Mayon is one of the most beautiful volcanoes in the world. The town at the foot is Legaspi, Island of Luzon.



The Negritos are of African descent and are growing fewer. They are fearless hunters. The picture on the right show a village of the Igorrotes, who are fierce and bloodthirsty. The heads of their enemies are valued as trophies.

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American people grew, and Spain removed General Weyler, but no other change was seen.

THE MAINE IS DESTROYED IN HAVANA HARBOUR AND WAR FOLLOWS

Finally when one of our battleships, the Maine, was in Havana Harbour, she was blown up, February 15, 1898, and more than two hundred and fifty lives were lost. It was believed that a mine had been exploded underneath her, and the people demanded that Spain be punished. President McKinley tried to avoid war, but could not succeed, and April 19, Congress declared that Cuba ought to be independent.

The first victory was the capture of Manila by Commodore Dewey. Troops were landed on Cuban soil on June 22, and the next day, and again on July 1, battles were fought near Santiago. A Spanish fleet under Admiral Cervera, which had come from Spain and entered the harbour of Santiago, suddenly came out, July 4, with the hope of escaping the blockading fleet. This fleet, under Commodore W. T. Sampson, with Commodore Schley second in command, followed and a running fight took place. One by one the Spanish ships were either sunk, or set on fire and run on the shore. After the fleet was destroyed Santiago soon surrendered with 23,000 men.

THE ISLAND OF PORTO RICO CAPTURED AND HELD

General Miles was sent to Porto Rico, another Spanish island east of Cuba, with a force of 17,000 men. This force had little fighting to do, and soon the whole island was in American hands.

Spain agreed to give up all claim to the control of Cuba, to give over Porto Rico and some other little islands near it, the Philippine Islands, and the Island of Guam, which is in the Pacific Ocean between Hawaii and the Philippines. The United States gave $20,000,000, though not exactly as payment for the islands.

No European nation believed that the United States would keep its promise not to keep Cuba. For a time, soldiers were kept there and an army officer acted as governor. Schools were established, roads and telegraphs were built and war was declared against yellow fever. It was discovered that the disease was carried from a sick person to a well one, only by a kind of mosquito. So the seaports were made clean, and all places where mosquitos could breed were looked after.

WHAT CUBA LACKS OF BEING ENTIRELY INDEPENDENT

Then the Cubans were offered control of their government if they would do the following four things: (1) Cuba must make no treaties with foreign powers which would hurt the United States; (2) the country must not go too deeply in debt; (3) it must give to the United States places on its shores to keep coal for the warships; (4) the ports must be kept clean so that yellow fever cannot get started. You see the island is so close to the United States that a ship may easily carry the disease to our southern ports.

The Cubans agreed, formed a constitution, and elected their officers. For a time all went smoothly, but after a time trouble began and an army was raised to drive out the President. Then the United States sent troops again, and kept order until the country became quiet again. Then another president was elected and the army was taken away. So you see that Cuba is not quite free, but is somewhat under the protection of the United States.

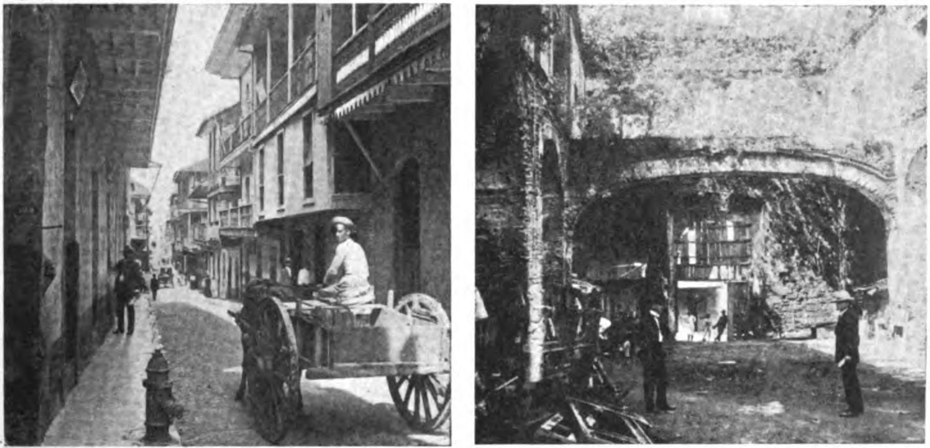
But what of the two islands we took from Spain? Porto Rico was visited by Columbus on his second voyage, and later Ponce de Leon, as you read on page 258, became governor. Negro slaves were brought in and the Indians gradually disappeared. For a little while the island was held by the English but afterward was returned to Spain. While Cuba was fighting for independence, Porto Rico was restless but did not declare open war.

PORTO RICO A WINTER PARADISE

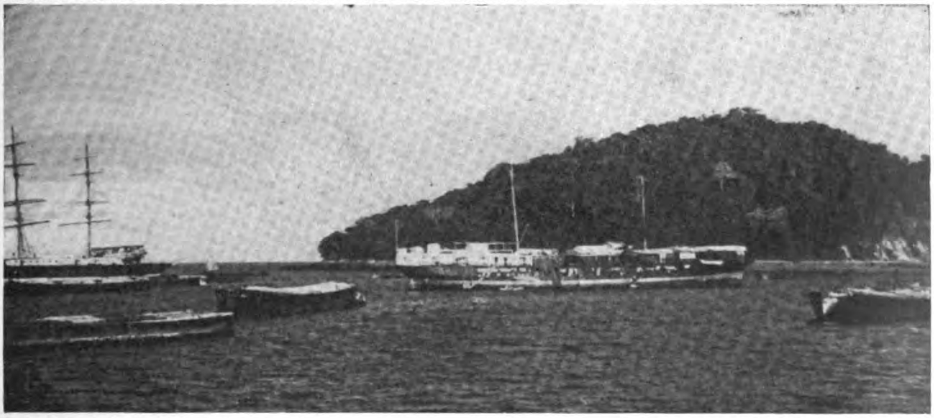
The island contains over 3,600 square miles, which means that it is about three-fourths the size of Connecticut. The climate is pleasant, though hot except in the mountains, and the soil is rich. There are large forests of good timber and the coffee tree grows well.

ALONG THE PANAMA CANAL ZONE

Among other tropical plants which grow in Panama is the rubber tree, which you see here. The rainfall and the heat make vegetation of all sorts grow like magic. In a few weeks, vines and ferns grow much higher than a man's head.



This street, in the city of Panama, with its quaint overhanging balconies, is entirely unlike one of our streets. The ruins of the old church show one of the flattest arches in existence.



The Bay of Panama is quiet now, but before many years it will be one of the busy ports of the world, with hundreds of ships waiting their turn to go through the canal. The engineers say that the great canal will certainly be ready before 1915.

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Sugar cane and tobacco are the largest crops, next to coffee, but cotton is grown also. Oranges, lemons, limes, grapefruit and pineapples grow wild.

About three-fifths of the people are white and the others have more or less negro blood. Except in the towns there are few educated people, for when the United States took the island only sixteen or seventeen persons in a hundred could read and write. Our government has built many new schools and soon we shall see great changes.

There is little to be said about Guam. It was taken because we needed a coaling station for warships. It is very much like the Philippines in soil, climate and population. Very few whites live on the island.

THE ISLANDS ROBERT LOUIS STEVENSON LOVED

Since we have been naming our chief possessions in the order in which we gained them, we now go back to the Pacific, where there are so many wonderful islands. One particularly beautiful group is the Samoan or Navigator Islands. They were discovered in 1768 by a French sailor, De Bougainville, but France never made any settlements. In 1839 Charles Wilkes, an American naval officer, surveyed the islands and made a sort of treaty with the chiefs.

Great Britain and the German Empire next began to be interested in the islands, and in 1889, these nations and the United States made an agreement to protect the native king. This king died in 1898, and there was a dispute about his successor. The three nations also could not agree about several matters, and so in 1899, the islands were divided between the United States and the German Empire. The United States took Tutuila and the Manua group, all together about 225 square miles. These islands are important only because of the harbour of Pago-Pago on Tutuila. This is one of the best harbours in the Pacific Ocean, and would be useful in case of war.

LIFE ON THE SAMOAN ISLANDS

The people are brown-skinned, tall and strong. Many of the girls are very beautiful. The climate is mild. Everything grows almost without labour, so that there is time for dancing, singing, feasting, and church-going; for nearly all of them are Christians. Robert Louis Stevenson spent his last years in the Samoan Islands, which he grew to love with all his great heart. The islanders sell cotton, sugar, coffee and cocoanuts, but as there are hardly 5,000 people on Tutuila, you can see that the trade cannot amount to very much. A naval officer is the governor.

While the United States was getting possession of so much foreign territory in 1898–99, it also picked up some small islands. Strange to say there were a number of small islands in the Pacific, which had never been claimed by any nation.

AN ISLAND ON WHICH NOTHING GROWS

Midway Island, for example, is coral sand. Nothing grows upon it, and the only residents are cable operators and a squad of marines. The servants are Chinese or Japanese. Three or four times a year a boat stops to leave supplies and orders, and brings books and newspapers. When it goes the few inhabitants settle down for another three months of quiet.

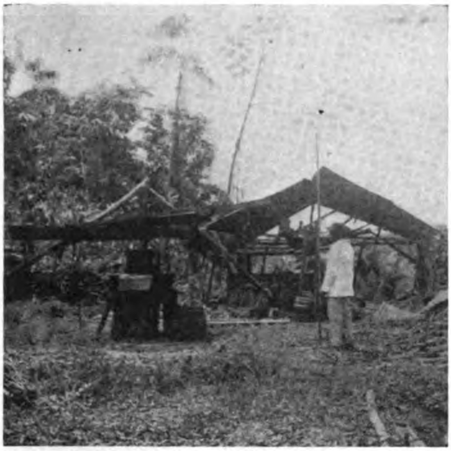
Now what is the Canal Zone? We shall not tell you much about the Panama Canal now, but shall leave that for another volume. It is enough to say that the Republic of Panama in 1903 leased to the United States a strip of land five miles wide on each side of the Canal. Over this the United States has entire control for a hundred years and then may continue the lease. The City of Colon on the Atlantic side, and of Panama on the Pacific side do not belong to the Zone. The United States has been given the right to see that the cities are kept clean, however.

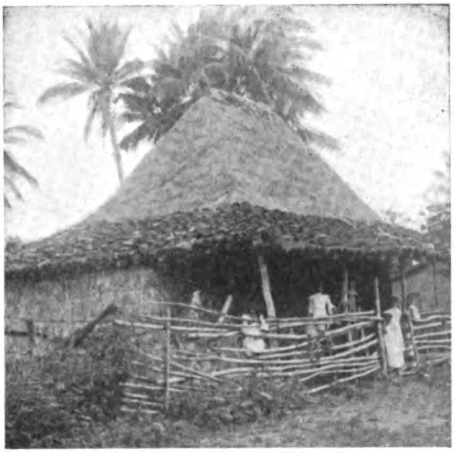
LIFE ON THE PANAMA CANAL ZONE

On the Zone have grown up several villages and towns, where the men at work on the Canal live. The inhabitants of the Zone are principally white men from the United States or negroes from the West Indies, though there are a few Spanish and Italian labourers. The natives of the country will not work.

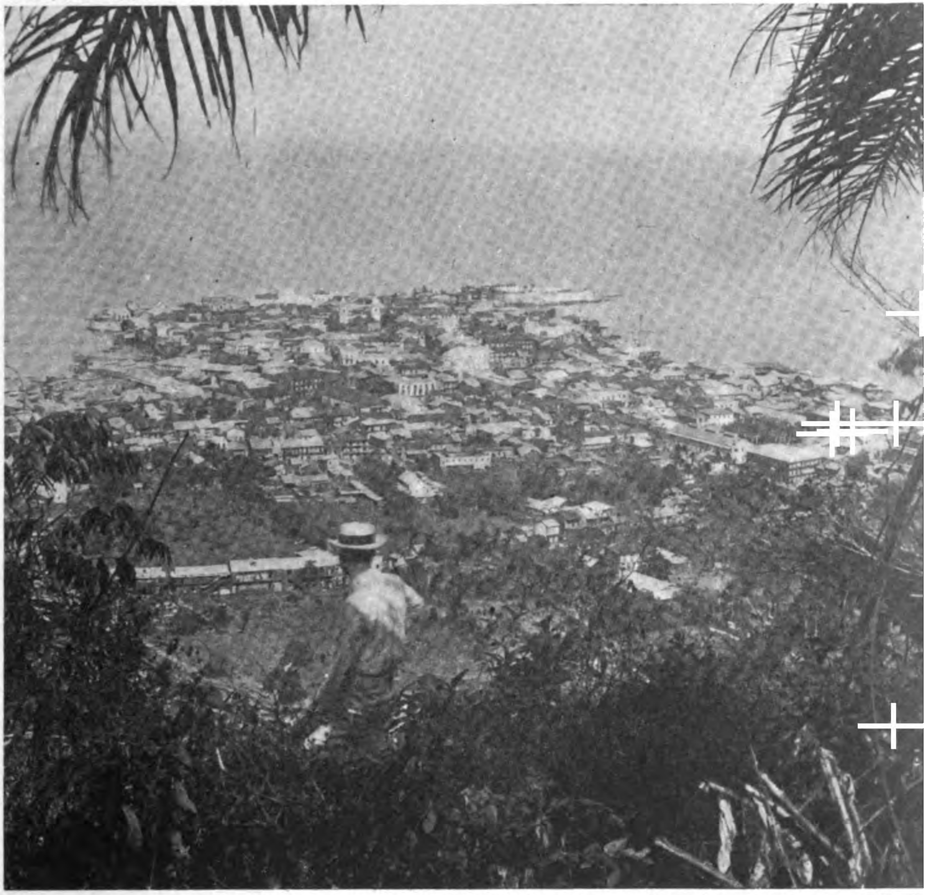
CONTINUED ON PAGE 2417

PANAMA AND THE COUNTRY AROUND





Sugar cane grows in Panama, and here we see a rude sugar-making plant. The cane is crushed between rollers, and the juice is boiled under the shed. The house on the right is the home of a native family.



Panama City is beautifully located, and since the American engineers cleaned up the streets and buil' sewers, it is a pleasant place to live. Much dirt and filth was removed and many old houses were torr **down to improve conditions.**

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THE SUBJECTS OF POETRY

HAVING now got a general idea of the uses of poetry and of how we can best proceed with the very pleasant task of storing our minds with good poetry, we have to turn next to a new series of studies, in noticing the different purposes of poetry, the subjects with which it deals. There are a great many of these, but as we shall only take up one at a time they will be easy to learn, and when we have gone through this series we shall find ourselves prepared to understand more clearly the poetry of each great poet, as, later on, we shall come to learn that also.

THE POETRY OF NATURE

CONTINUED FROM 2157

EVERY country has a different kind of poetry. That is quite natural. Just as the peoples differ, so will their thoughts and feelings differ. We cannot attempt here to show those differences between the poetry of one country and another; it is enough to say that the poetry of France, of Italy, or of Scandinavia is quite another thing from that of America. English poetry, too, is somewhat different from Irish or Scottish, though many Scottish and Irish poets have written poems which are purely English in spirit and form.

The first thing we notice in reading English poetry is what is called the "feeling for Nature." This simply means that the writers all seem to be in love with the natural objects and the rural life of their own land. They rejoice to sing of spring mornings, of summer days and sunsets, of lakes and rivers, mountains and glens, of larks and nightingales, the sea that breaks along her many coasts, and so on.

This love of Nature does not appear so much in the poetry of any other country as in that of England.

Even the great dramatic poets, like Shakespeare and Christopher Marlowe, had this love for the natural delights of the country. But long before Shakespeare and Marlowe, long before Chaucer even — and he loved the natural scenes of Nature, and sang of them sweetly — this "note," as it is called, had been given to all her poetry.

The very oldest English song was about the coming of summer. It was written a thousand years ago, and its words are so simple, that, although our language has greatly changed since then, it is not very difficult to read it even now. We shall print it in modern English, however, as it was changed by a poet who lived two hundred years ago:

Summer is a-coming in,
  Loud sing, cuckoo;
Groweth seed, and bloweth mead,
And springeth the wood now,
  Sing, cuckoo, cuckoo.

Ewe bleateth after lamb,
Loweth calf after cow,
Bullock starteth, buck departeth,
  Merry sing, cuckoo,
  Cuckoo, cuckoo.
Well singeth the cuckoo,
Nor cease to sing now;
  Sing cuckoo, now,
  Sing cuckoo.

And in all these years all the poets have been singing out of the fulness of their hearts of the changing seasons and the green and golden beauties of the land, so that a vast amount of the "poetry of Nature" is to be found in the works of our poets.

Tennyson gives us many pictures of Nature that are perfectly beautiful, as, for instance, "The Brook" (see page 95); while Wordsworth in such a poem as "The Daffodils" (see page 96), and Bryant, Whitman, Burns, Longfellow, and many more, are so filled with this great love of Nature that we might almost think in reading them we were listening to the very voice of Nature herself.

That is really what great poetry ought to be — the voice of Nature. And American poetry is great largely because so much of it has sprung from our love of her beauties.

JUNE

This selection is taken from "The Vision of Sir Launfal," by James Russell Lowell, one of our foremost American poets. It contains the most beautiful description of June that ever was written in any language.

And what is so rare as a day in June?
Then, if ever, come perfect days;
Then Heaven tries earth if it be in tune,
And over it softly her warm ear lays;
Whether we look or whether we listen,
We hear life murmur or see it glisten;

. . . .

The little bird sits at his door in the sun,
Atilt like a blossom among the leaves,
And lets his illumined being o'errun
With the deluge of summer it receives;
His mate feels the eggs beneath her wings,
And the heart in her dumb breast flutters and sings;
He sings to the wide world and she to her nest, —
In the nice ear of Nature which song is best?

THE BRIDGE

Long a favourite recitation, this poem by Longfellow is certainly one of his finest shorter pieces. The subject is picturesque and suggestive of thought. The poem is understood to have been inspired by just such a scene in Longfellow's native town of Portland, Maine.

I stood on the bridge at midnight,
As the clocks were striking the hour,
And the moon rose o'er the city,
Behind the dark church-tower.

I saw her bright reflection
In the waters under me,
Like a golden goblet falling
And sinking into the sea.

And far in the hazy distance
Of that lovely night in June,
The blaze of the flaming furnace
Gleamed redder than the moon.

Among the long, black rafters
The waving shadows lay,
And the current that came from the ocean
Seemed to lift and bear them away;

As, sweeping and eddying through them,
Rose the belated tide,
And, streaming into the moonlight,
The seaweed floated wide.

And, like those waters rushing
Among the wooden piers,
A flood of thoughts came o'er me
That filled my eyes with tears.

How often, oh, how often,
In the days that had gone by,
I had stood on that bridge at midnight,
And gazed on that wave and sky.

How often, oh, how often,
I had wished that the ebbing tide
Would bear me away on its bosom
O'er the ocean wild and wide!

For my heart was hot, and restless,
And my life was full of care,
And the burden laid upon me
Seemed greater than I could bear.

But now it has fallen from me,
It is buried in the sea;
And only the sorrow of others
Throws its shadow over me.

Yet whenever I cross the river,
On its bridge with wooden piers,
Like the odour of brine from the ocean
Comes the thought of other years.

And I think how many thousands
Of care-encumbered men,
Each bearing his burden of sorrow,
Have crossed the bridge since then.

. . . .

And for ever and for ever,
As long as the river flows,
As long as the heart has passions,
As long as life has woes;

The moon and its broken reflection
And its shadows shall appear,
As a symbol of love in heaven,
And its wavering image here.

AUTUMN

These lines are by the English poet, Percy Bysshe Shelley, and illustrate a view of Nature which, though it lacks the simplicity we find in the Nature poems of Robert Burns, gives us beauty of another kind, complex and more or less artificial, yet wonderfully rhythmical and melodious.

The warm sun is failing, the bleak wind is wailing,
The bare boughs are sighing, the pale flowers are dying;
And the Year
On the earth, her deathbed, in a shroud of leaves dead
Is lying.
Come, Months, come away,
From November to May,
In your saddest array —
Follow the bier
Of the dead cold Year,
And like dim shadows watch by her sepulchre.

The chill rain is falling, the nipt worm is crawling,
The rivers are swelling, the thunder is knelling
For the Year;
The blithe swallows are flown, and the lizards each gone
To his dwelling.
Come, Months, come away,
Put on white, black, and gray;
Let your light sisters play;
Ye, follow the bier
Of the dead cold Year,
And make her grave green with tear on tear.

O, BOYS, CARRY ME 'LONG

These old darkey melodies are very dear to the hearts of most of us. The following was written by Stephen Collins Foster, the author of "The Old Kentucky Home."

Oh! carry me 'long;
Der's no more trouble for me;
I's guine to roam in a happy home,
Where all de niggas am free.
I've worked long in de fields;
I've handled many a hoe;
I'll turn my eye, before I die,
And see de sugar-cane grow.
Oh! boys, carry me 'long,
Carry me till I die;
Carry me down to de buryin' groun',
Massa, don't you cry.

All ober de land,
I've wandered many a day;
To blow de horn, and mind de corn,
And keep de possum away.
No use for me now,
So, darkies, bury me low;
My horn is dry and I must lie,
Wha de possum nebber can go.
Oh! boys, carry me 'long,
Carry me till I die;
Carry me down to de buryin' groun',
Massa, don't you cry.

Farewell to de boys,
Wid hearts so happy and light,
Dey sing a song, de whole day long,
And dance de juba at night.
Farewell to de fields
Ob cotton, 'bacco, and all;
I's guine to hoe, in a bressed row
Wha de corn grows mellow and tall.
Oh! boys, carry me 'long,
Carry me till I die;
Carry me down to de buryin' groun',
Massa, don't you cry.

Farewell to de hills,
De meadows covered wid green,
Old brindle Boss, and de old gray hoss,
All beaten, broken and lean.
Farewell to de dog,
Dat always followed me round;
Old Sancho 'll wail, and droop his tail,
When I am under de ground.
Oh! boys, carry me 'long,
Carry me till I die;
Carry me down to de buryin' groun',
Massa, don't you cry.

THE SILENT VOICES

When the dumb Hour, clothed in black,
Brings the Dreams about my bed,
Call me not so often back,
Silent Voices of the dead,
Toward the lowland ways behind me,
And the sunlight that is gone!
Call me rather, silent Voices,
Forward to the starry track
Glimmering up the heights beyond me
On, and always on!

— Lord Tennyson.

THE OLD ARM-CHAIR

Most of us have some inanimate thing in our possession around which cluster memories that make it unspeakably dear to us. "The Old Arm-Chair" was written by Eliza Cook, an English poet.

I love it, I love it; and who shall dare
To chide me for loving that old arm-chair?
I've treasured it long as a sainted prize;
I've bedew'd it with tears, and embalm'd it with sighs.
'Tis bound by a thousand bands to my heart;
Not a tie will break, not a link will start.
Would ye learn the spell? — a mother sat there;
And a sacred thing is that old arm-chair.

In childhood's hour I linger'd near
The hallow'd seat with listening ear;
And gentle words that a mother would give
To fit me to die, and teach me to live.
She told me shame would never betide,
With truth for my creed and God for my guide;
She taught me to lisp my earliest prayer,
As I knelt beside the old arm-chair.

I sat and watch'd her many a day,
When her eye grew dim, and her locks were gray:
And I almost worshipp'd her when she smiled,
And turn'd from her Bible, to bless her child.
Years roll'd on: but the last one sped —
My idol was shattered; my earth-star fled;
I learnt how much the heart can bear,
When I saw her die in that old arm-chair.

'Tis past, 'tis past, but I gaze on it now
With quivering breath and throbbing brow;
'Twas there she nursed me; 'twas there she died;
And Memory flows with lava tide.
Say it is folly, and deem me weak,
While the scalding drops start down my cheek;
But I love it, I love it; and cannot tear
My soul from a mother's old arm-chair.

*MY MENAGERIE

This little poem by Mrs. Elder is full of the quaint fancies of childhood. Who of us has not lain on the soft, warm grass and watched the pictures in the sky form and melt away as the clouds drift across the heavens?

No need to the circus to go have I,
For a whole menagerie lives in the sky!

And when in the tall, thick grass I lie,
I see the procession go passing by.

There are lions and bears and queer little cats,
And moolies and mice and long-tailed rats.

And great big elephants trotting behind
Some very fat pigs who, I guess, have just dined.

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And sometimes a clown slyly shows his face,
As he struts along at a pompous pace.

And I laugh as I watch the caravan pass,
As I lie on my back on the soft, green grass.

It's lots nicer than sitting squeezed in a row,
And the best of it is there's no pay, you know.

All you have to do is to look at the sky,
And you'll see the procession go passing by.

THE BAREFOOT BOY

"The barefoot boy," who does not love him? John Greenleaf Whittier shows him to us in all his winsomeness in this little poem.

Blessings on thee, little man,
Barefoot boy, with cheek of tan!
With thy turned-up pantaloons,
And thy merry whistled tunes;
With thy red lip, redder still
Kissed by strawberries on the hill;
With the sunshine on thy face,
Through thy torn brim's jaunty grace;
From my heart I give thee joy,—
I was once a barefoot boy!
Prince thou art,—the grown-up man
Only is republican.
Let the million-dollared ride!
Barefoot trudging at his side,
Thou hast more than he can buy
In the reach of ear and eye,—
Outward sunshine, inward joy:
Blessings on thee, barefoot boy!

Oh, for boyhood's painless play,
Sleep that wakes in laughing day,
Health that mocks the doctor's rules,
Knowledge never learned of schools,
Of the wild bee's morning chase,
Of the wild-flower's time and place,
Flight of fowl and habitude
Of the tenants of the wood;
How the tortoise bears his shell,
How the woodchuck digs his cell,
And the ground-mole sinks his well;
How the robin feeds her young,
How the oriole's nest is hung;
Where the whitest lilies blow,
Where the freshest berries grow,
Where the ground-nut trails its vine,
Where the wood-grape's clusters shine:
Of the black wasp's cunning way,
Mason of his walls of clay,
And the architectural plans
Of gray hornet artisans!
For, eschewing books and tasks,
Nature answers all he asks;
Hand in hand with her he walks;
Face to face with her he talks,
Part and parcel of her joy,—
Blessings on the barefoot boy!

Oh for boyhood's time of June,
Crowding years in one brief moon,
When all things I heard or saw,
Me, their master, waited for.
I was rich in flowers and trees,
Humming-birds and honey-bees;
For my sport the squirrel played,
Plied the snouted mole his spade;
For my taste the blackberry cone
Purpled over hedge and stone;
Laughed the brook for my delight
Through the day and through the night,
Whispering at the garden wall,
Talked with me from fall to fall;
Mine the sand-rimmed pickerel pond,
Mine the walnut slopes beyond,
Mine, on bending orchard trees,
Apples of Hesperides!
Still as my horizon grew,
Larger grew my riches too;
All the world I saw or knew
Seemed a complex Chinese toy,
Fashioned for a barefoot boy!

Oh for festal dainties spread,
Like my bowl of milk and bread;
Pewter spoon and bowl of wood,
On the door-stone, gray and rude!
O'er me, like a regal tent,
Cloudy-ribbed, the sunset bent,
Purple-curtained, fringed with gold,
Looped in many a wind-swung fold;
While for music came the play
Of the pied frogs' orchestra;
And, to light the noisy choir,
Lit the fly his lamp of fire.
I was monarch: pomp and joy
Waited on the barefoot boy!

Cheerily, then, my little man,
Live and laugh, as boyhood can!
Though the flinty slopes be hard,
Stubble-speared the new-mown sward,
Every morn shall lead thee through
Fresh baptisms of the dew;
Every evening from thy feet
Shall the cool wind kiss the heat:
All too soon these feet must hide
In the prison cells of pride,
Lose the freedom of the sod,
Like the colt's for work be shod,
Made to tread the mills of toil,
Up and down in ceaseless moil:
Happy if their track be found
Never on forbidden ground;
Happy if they sink not in
Quick and treacherous sands of sin.
Ah! that thou couldst know thy joy,
Ere it passes, barefoot boy!

A VISIT FROM ST. NICHOLAS

"A Visit from St. Nicholas" is a poem by Clement C. Moore that is very well known and much loved by most of our boys and girls.

'Twas the night before Christmas, when all through the house
Not a creature was stirring, not even a mouse;
The stockings were hung by the chimney with care,
In hopes that St. Nicholas soon would be there;

The children were nestled all snug in their beds,
While visions of sugar-plums danced in their heads;
And Mamma in her kerchief, and I in my cap,
Had just settled our brains for a long winter nap;
When out on the lawn there arose such a clatter,
I sprang from my bed to see what was the matter.
Away to the window I flew like a flash,
Tore open the shutters and threw up the sash.
The moon, on the breast of the new-fallen snow,
Gave a lustre of midday to objects below;
When, what to my wondering eyes should appear,
But a miniature sleigh and eight tiny reindeer,
With a little old driver, so lively and quick,
I knew in a moment it must be St. Nick.
More rapid than eagles his coursers they came,
And he whistled, and shouted, and called them by name:
"Now, Dasher! now, Dancer! now, Prancer and Vixen
On! Comet, on! Cupid, on! Dunder and Blixen —
To the top of the porch, to the top of the wall!
Now, dash away, dash away, dash away all!"
As dry leaves that before the wild hurricane fly,
When they meet with an obstacle, mount to the sky,
So, up to the house-top the coursers they flew,
With the sleigh full of toys — and St. Nicholas too.
And then in a twinkling I heard on the roof
The prancing and pawing of each little hoof.
As I drew in my head, and was turning around,
Down the chimney St. Nicholas came with a bound.
He was dressed all in fur from his head to his foot,
And his clothes were all tarnished with ashes and soot;
A bundle of toys he had flung on his back,
And he looked like a peddler just opening his pack.
His eyes how they twinkled! his dimples how merry!
His cheeks were like roses, his nose like a cherry;
His droll little mouth was drawn up like a bow,
And the beard on his chin was as white as the snow.
The stump of a pipe he held tight in his teeth,
And the smoke, it encircled his head like a wreath.
He had a broad face and a little round belly
That shook, when he laughed, like a bowl full of jelly.
He was chubby and plump — a right jolly old elf;
And I laughed when I saw him, in spite of myself.
A wink of his eye, and a twist of his head,
Soon gave me to know I had nothing to dread.
He spoke not a word, but went straight to his work,
And filled all the stockings; then turned with a jerk,
And laying his finger aside of his nose,
And giving a nod, up the chimney he rose.
He sprang to his sleigh, to his team gave a whistle;
And away they all flew like the down of a thistle;
But I heard him exclaim, ere he drove out of sight,
"Happy Christmas to all, and to all a good-night!"

THE LOVE KNOT

The following poem by Nora Perry is full of a rollicking rhythm that has a certain charm.

Tying her bonnet under her chin,
She tied her raven ringlets in;
But not alone in its silken snare
Did she catch her lovely floating hair,
For, tying her bonnet under her chin,
She tied a young man's heart within.

They were strolling together up the hill,
Where the wind comes blowing merry and chill;
And it blew the curls a frolicsome race,
All over the happy peach-colour'd face,
Till, scolding and laughing, she tied them in,
Under her beautiful dimpled chin.

. . . .

And it blew a colour, bright as the bloom
Of the pinkest fuchsia's tossing plume,
All over the cheeks of the prettiest girl
That ever imprison'd a romping curl,
Or, tying her bonnet under her chin,
Tied a young man's heart within.

Steeper and steeper grew the hill;
Madder, merrier, chillier still
The western wind blew down, and play'd
The wildest tricks with the little maid,
As, tying her bonnet under her chin,
She tied a young man's heart within.

O western wind, do you think it was fair
To play such tricks with her floating hair?
To gladly, gleefully do your best
To blow her against the young man's breast,
Where he as gladly folded her in;
And kissed her mouth and dimpled chin?

THE STORIES OF CAPTAIN MARRYAT

"JACOB FAITHFUL" is a story with two "morals." Its first moral is that, with the advantages of good education and good principle, there is every reason to hope and every right to expect that we shall do well in this world. The other is, that, as one of the characters in the novel says, "There is no such thing in this world as independence, unless in a savage state. In society we are all mutually dependent upon each other. Independence of mind we may have, but no more." "Midshipman Easy" is also a story that teaches a lesson while it entertains us, and its lesson is that the "equality of man" is only a theory, as we find in life that all men are not equal in ability, any more than in body or in character.

JACOB FAITHFUL

The Waif of the Thames and How He Rose in Life

CONTINUED FROM 2165

JACOB was the only surviving son of humble toilers on the Thames. He was born and lived on the river, or rather on a barge, and his parents met with an untimely death through their intemperate habits When they died Jacob was eleven years old; a young savage who knew not how to read or write—nothing, in fact, beyond a few sayings of his father, the meanings of certain signs used by his father to indicate cargo and quantities, the ability to navigate a barge or lighter, and an acquaintance with the river. The chief of the sayings referred to were, "It's no use crying; what's done can't be helped"; "Take it coolly"; and "Better luck next time." His sad lot awakened the sympathy of the proprietor of the lighter and his wife and little daughter. The proprietor's name was Mr. Drummond. Here is the account of what happened at the first interview Jacob had with his new friends:

"Have you any friends, my poor boy?" inquired the lady.

"No."

"What! No relations on shore?"

"I never was on shore before in my life."

"Do you know that you are a destitute orphan?"

"What's that?"

"That you have no father or mother," said the little girl.

"Well," replied he, in his father's words, having no answer more appropriate, "it's no use crying; what's done can't be helped."

"But what do you intend to do now?" inquired the proprietor, looking hard at him after his previous answer.

"Don't know, I'm sure. Take it coolly," he replied, whimpering.

"What a very odd child!" observed the lady. "Is he aware of the extent of his misfortune?"

"Better luck next time, missus," he answered, wiping his eyes with the back of his hand.

"What strange answers from a child who has shown so much feeling!" observed the proprietor to his wife. "What is your name?"

"Jacob Faithful."

"Can you write or read?"

"No," he said, again using his father's words; "no, I can't; I wish I could."

"Very well, my poor boy, we'll see what's to be done," said the proprietor.

A public subscription was raised on behalf of the little waif, and when decent clothes had been provided for him, he was one day summoned into the parlour of the proprietor's house. We shall have the story of what happened in his own words.

"Mr. Drummond and his wife surveyed me in my altered habiliments, and amused themselves at my awkwardness, at the same time that they admired my well-knit, compact, and straight figure, set off by a fit, in my opinion, much too strait. Their little daughter Sarah, who often spoke to me, went up and whispered to her mother. 'You must ask papa,' was the reply. Another whisper, and a kiss, and

Mr. Drummond told me that I should dine with them. In a few minutes I followed them into the dining-room, and, for the first time, I was seated to a repast which could boast of some of the supernumerary comforts of civilised life. There I sat, perched on a chair, with my feet swinging close to the carpet, glowing with heat from the compression of my clothes, and the novelty of my situation, and all that was around me.

"Mr. Drummond helped me to some scalding soup, and a silver spoon was put into my hand, which I twisted round and round, looking at my face reflected in miniature on its polish.

WHAT HAPPENED WHEN JACOB FIRST TRIED TO USE A SPOON

"'Now, Jacob, you must eat the soup with the spoon,' said little Sarah, laughing; 'we shall all be done. Be quick.'

"'Take it coolly,' replied I, digging my spoon into the burning preparation, and tossing it into my mouth. The result can be imagined.

"'The poor boy has been shamefully neglected,' observed the good-natured Mrs. Drummond. 'Come, Jacob, sit down and try it again; it will not burn you now.'

"'Better luck next time,' said I, shoving in a portion of it, with a great deal of tremulous hesitation, and spilling one half of it in its transit. It was now cool, but I did not get on very fast; I held my spoon awry, and soiled my clothes.

"Mrs. Drummond interfered, and kindly showed me how to proceed; when Mr. Drummond said: 'Let the boy eat it after his own fashion, my dear—only, be quick, Jacob, for we are waiting.'

JACOB FAITHFUL FEELS THE BURDEN AND SHAME OF HIS IGNORANCE

"'Then I see no good losing so much of it, taking it in tale,' observed I, 'when I can ship it all in bulk in a minute.' I laid down my spoon, and, stooping my head, applied my mouth to the edge of the plate, and sucked the remainder down my throat without spilling a drop. I looked up for approbation, and was very much astounded to hear Mrs. Drummond quietly observe: 'That is not the way to eat soup.'

"I made so many blunders during the meal that little Sarah was in a continued roar of laughter; and I felt so miserable that I heartily wished myself again in my dog-kennel on board the lighter, gnawing biscuit in all the happiness of content, and dignity of simplicity.

"For the first time I felt the pangs of humiliation. Ignorance is not always debasing. On board of the lighter I was sufficient for myself, my company, and my duties. I felt an elasticity of mind, a respect for myself, and a consciousness of power, as the immense mass was guided through the waters by my single arm. There, without being able to analyse my feelings, I was a spirit guiding a little world; and now, at this table, and in company with rational and well-informed beings, I felt humiliated and degraded; my heart was overflowing with shame, and at one unusually loud laugh of the little Sarah the heaped-up measure of my anguish overflowed, and I burst into a passion of tears.

"As I lay with my head upon the tablecloth, regardless of those decencies I had so much feared, and awake only to a deep sense of wounded pride, each sob coming from the very core of my heart, I felt a soft breathing warm upon my cheek, that caused me to look up timidly, and I beheld the glowing and beautiful face of little Sarah.

HOW JACOB CAME TO FEEL THAT HE WAS OF SOME VALUE IN THE WORLD

"Her eyes were filled with tears, and were looking so softly and beseechingly at me that I felt at once I was of some value, and panted to be of more.

"'I won't laugh at you any more.' said she; 'so don't cry, Jacob.'

"'No more I will,' replied I, cheering up. She remained standing by me, and I felt grateful. 'The first time I get a piece of wood,' whispered I, 'I'll cut you out a barge.'

"'Oh, papa! Jacob says he'll cut me out a barge.'

"'That boy has a heart,' said Mr. Drummond to his wife.

"'But will it swim, Jacob?' inquired the little girl.

"'Yes; and if it's *lopsided*, call me a lubber.'

"'What's lopsided, and what's a lubber?' replied Sarah.

"'Why, don't you know?' cried I. And I felt my confidence return when

I found that in this little instance I knew more than she did."

Through the influence of Mr. Drummond, Jacob entered a charity school at Brentford, where he stayed until he was fourteen years old. A diverting account is given of his experiences, which were not all of a pleasant character. But after the initial difficulties were smoothed away, he made rapid progress with his studies and became a favourite pupil of the master, Dominie Dobbs, one of the most attractive schoolmasters in the old school of fiction—a man full of classic learning, singularly absent-minded at times, but with a heart of the kindliest.

Good old Dominie Dobbs had rather a long nose, and the boys who could draw were apt to make sketches of him with his nose exaggerated. One of these young rascals made many such comic pictures, and an usher at the school, named Knapps, who did not care for Jacob, schemed to get the latter into disgrace by representing him as having thus made fun of the kind old master, who loved the boy for his frank and fresh character. But Jacob was able to prove he had not made fun of his master, and the real culprit confessed, to the joy of the Dominie, who could not believe Jacob guilty.

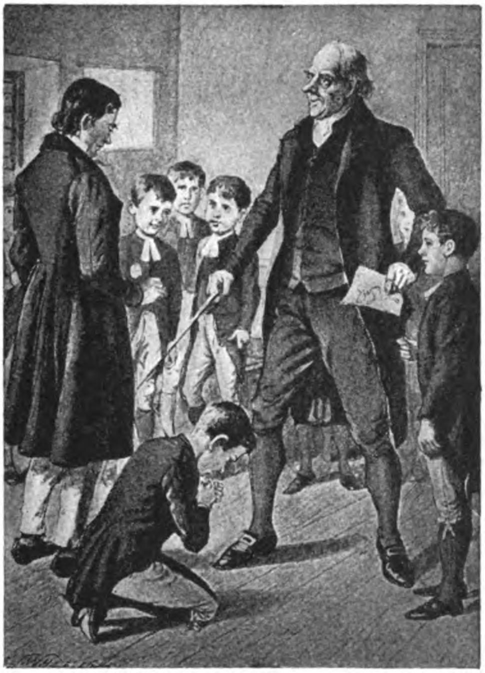
When Jacob had completed his fourteenth year, Mr. Drummond apprenticed him to a waterman, and he returned to the life of the river. Here is Jacob's account of what his schoolmaster said to him in bidding him farewell.

"Jacob, thou hast profited well by the lessons which I have bestowed on thee. There are many who will tell thee that thy knowledge is of no use, for what avail can the Latin tongue be to a boy on board of a lighter? Others may think that I have done wrong thus to instruct thee, as thy knowledge may render thee vain or discontented with thy situation in life. Such is too often the case, I grant; but it is because education is not so general as it ought to be. Were all educated, the superiority acquired or presumed upon by education would be lost, and the nation would not only be wiser, but happier.

"Jacob, I feel that thou wilt not be spoilt by the knowledge instilled into thee; but, mark me, parade it not, for it will be vanity and make thee enemies. Cultivate thyself as much as thou canst, but in due season—thy duties to thy employers must be first attended to—but treasure up what thou hast, and lay up more when thou canst. Consider it as hidden wealth, which may hereafter be advantageously employed. Thou art now but an apprentice on a barge; but what may thou not be, Jacob, if thou art diligent — if thou fear God, and be honest?"

In the early part of his apprenticeship Jacob Faithful followed very closely the precepts of his old instructor. Then there came a crisis in his career. He had been induced to take up a temporary position in the counting-house of Mr. Drummond. This led to a false charge being brought against him by a new head clerk. The charge not being dismissed as readily by his employer as he thought it should have been, Jacob resolved that never again would he be beholden to Mr. Drummond for favours. He would be

JACOB FAITHFUL IS FREED FROM BLAME



Mr. Knapps, the usher, had thought to get Jacob into trouble by making the kind-hearted Dominie Dobbs believe that Jacob had drawn the comic pictures, one of which made fun of the master's long nose; but Barnaby Bracegirdle confessed he drew them, and Jacob was freed from blame.

independent. He explained the facts leading to the charge to his little friend Sarah, but nothing would induce him for a long time to approach Mr. Drummond again.

Meanwhile, he made the acquaintance of an old whaling captain, named Turnbull, whose life he saved. Then he was "pressed" into the Navy. After some exciting adventures, he was left a large fortune by Captain Turnbull, and by this time he had found out how impossible it is for anyone to be independent of one's fellows, and of the mistake he had made with regard to the action of his employer.

When we leave him, he had justified his old schoolmaster's faith in him, and one of his first real friends, Sarah Drummond, had become Mrs. Faithful.

MIDSHIPMAN EASY

And What He Thought About the "Rights of Man"

Master John Easy was the son of Mr. Nicodemus Easy, a gentleman of wealth, who prided himself upon being also something of a philosopher. Master Easy was a spoilt child, and when the family doctor touched upon the subject of his going to school, the father raised curious objections.

"The great objection I have to sending a boy to school," said Mr. Easy, "is, that I consider that the discipline enforced is not only contrary to the rights of men, but also in opposition to all sound sense and common judgment. No, sir, without they can teach without resorting to such a fundamental error as flogging, my boy shall never go to school"—a sentence that shows Mr. Easy had not been sufficiently educated himself.

But Dr. Middleton knowing of a school where the birch was not used, and giving other good reasons why the boy should be sent to school, Mr. Easy at length consented to follow the doctor's advice. He announced his decision to Mrs. Easy on the following day at tea-time.

JACK EASY ARGUES UP THE APPLE-TREE

"To school, Mr. Easy? What, send Johnny to school? Why, he almost reads already! Surely I can teach him that? Johnny, dear, come here. Tell me, now, what's the letter A? You were singing it in the garden this morning."

"I want some sugar," replied Johnny, stretching his arm over the table to the sugar-basin, which was out of his reach.

"Well, my love, you shall have a great lump if you will tell me what's the letter A."

"A was an archer, and shot at a frog," replied Johnny in a surly tone.

"There now, Mr. Easy; and he can go through the whole alphabet! Can't he, Sarah?"

"That he can, the dear! Can't you, Johnny, dear?"

"No," replied Johnny.

"Yes, you can, my love; you know what's the letter B. Now don't you?"

"Yes," replied Johnny.

"There, Mr. Easy, you see what the boy knows, and how obedient he is, too! Come, Johnny, dear, tell us what was B."

"No, I won't!" replied Johnny. "I want some more sugar." And Johnny, who had climbed on a chair, spread himself over the table to reach it.

"Mercy, Sarah! Pull him off; he'll upset the urn!" screamed Mrs. Easy.

Sarah caught hold of Johnny to pull him back, but Johnny, resisting the interference, turned round on his back as he lay on the table, and kicked Sarah in the face, just as she made another desperate grasp at him. The rebound from the kick, given as he lay on a smooth mahogany table, brought Johnny's head in contact with the urn, which was upset in the opposite direction, and, notwithstanding a rapid movement on the part of Mr. Easy, he received a sufficient portion of boiling liquid on his legs to scald him severely, and induce him to behave altogether in a very unphilosophical way.

HOW NICODEMUS EASY FORGOT FOR A MOMENT THE "RIGHTS OF MAN"

In the meantime Sarah and Mrs. Easy had caught up Johnny, and were both holding him at the same time, exclaiming and lamenting. The pain of the scald, and the indifference shown towards him, were too much for Mr. Easy's temper to put up with. He snatched Johnny out of their arms, and, quite forgetting his equality and rights of man, belaboured him without mercy. Sarah flew in to interfere, and received a blow which not only made her see a thousand stars, but sent her reeling on the floor. Mrs. Easy went off into hysterics, and Johnny howled so as to be heard at a quarter of a mile.

At this moment Dr. Middleton put in an appearance; and the next day Johnny was put into the doctor's chariot and taken to school. At Mr. Bonnycastle's establishment no birch was used—that worthy schoolmaster relied on the cane! And it was not long before Johnny, being a bright boy mentally, began both to recognise discipline, under the shadow of the birch-rod, and to make rapid progress with his studies.

HOW MASTER EASY'S PASSION FOR DISPUTING GOT HIM INTO TROUBLE

Now, at each vacation Mr. Easy attempted to instil into his son's mind "the rights of man." And thus was our hero educated until he was sixteen and exceedingly fond of argument; indeed, he could out-talk his father. With his master he never attempted to "argue the point," but he was in the habit of arguing with all the boys until it ended in a fight, which decided the point in dispute.

One morning, when he had been fishing in the river without any success, he observed a large pond which had the appearance of being well stocked. He jumped the park palings, and threw in his line. He had pulled up several fine fish when he was accosted by the proprietor, accompanied by a couple of keepers.

"Pray, sir, may I inquire whether you are aware that you are trespassing?"

"The word trespass, my dear sir," replied Jack, "will admit of much argument, and I will divide it into three heads. It implies, according to the conventional meaning, coming without permission upon the land or property of another. Now, sir, the question may all be resolved in the following: Was not the world made for all? And has anyone, or any portion of its inhabitants, an exclusive right to claim any part of it as his property? If you please, I have laid down the proposition, and we will now argue the point."

The gentleman who had accosted Jack had heard of Mr. Easy and his arguments. He was, besides, a humorist, and more inclined to laugh than to be angry.

JACK'S UNSUCCESSFUL ATTEMPT TO ARGUE WITH AN ANGRY GENTLEMAN

So the argument proceeded until Jack admitted that if two men chased the same animal, and both came up to it at the same time, the strongest would bear it off.

"Well, then," Jack was asked, "where is your equality?"

"That," said Jack, "does not disprove that men were intended to be equal; it only proves that they are not so. Neither does it disprove that everything was made for the benefit of all; it only proves that the strong will take advantage of the weak, which is very natural."

In the result Jack was deprived not only of the fish he had taken, but also of his fishing-rod, the proprietor being the "stronger party."

A few days afterwards he had an even more uncomfortable experience. He discovered on the other side of the hedge an apple-tree bearing tempting fruit, and he immediately broke through the hedge and, climbing the tree, began to eat.

Called to account by the farmer, he proceeded to argue the point.

"My good man," said he, "it is quite a prejudice on your part to imagine that apples were not given, as well as all other fruit, for the benefit of us all. They are common property, believe me."

But the farmer had no time to argue. Calling a boy, he sent him to the farmhouse, whence he returned with a large bulldog. "Mark him, Cæsar!" said the farmer to the dog, referring to Jack.

The dog crouched down on the grass, with his head up and eyes glaring at Jack, showing a range of teeth that drove his philosophy out of his head.

JACK'S ADVENTURE WITH THE BULLDOG AND THE WILD BULL

For a little while Jack was left ruminating. Then another ruminating animal, a bull, who had been turned out in the orchard, put in an appearance and advanced towards Cæsar. A combat proceeded on the side of the hedge at which Jack had gained admission. Jack prepared to make his escape in another direction, though the hedge there joined on to the garden near the farm. He was slipping down the trunk of the apple-tree when he heard a tremendous roar. The dog had been tossed by the bull.

Jack took to his heels; but the bull saw him, and bounded after him. Jack gained and flew over the hedge just as the enraged animal drove his head into it. Whilst the bull fell into a saw-pit, Jack upset two hives of bees; and, half blinded by their stings, he stumbled over the brickwork of a well. Fortunately for him, he seized the chain in his descent to the bottom, and finally made himself as comfortable as he could in the bucket.

JACK FALLS DOWN A DEEP WELL AND IS DRAWN UP IN THE BUCKET

The bucket was drawn up by a maid and a farm-hand, who, when they saw Jack at the top, fled in fright, letting the bucket again descend. The man was struck on the jaw with the winch, and the maid, running into the kitchen, fell on sundry heaps of dough waiting to be baked in the oven. It was not till the farmer made his appearance that the servant and the farm-hand regained their senses. The farmer then went to the well, and Jack was drawn up, half dead with cold.

When he had recovered, he was asked his name, and it appeared that Mr. Easy was the farmer's landlord.

"Why," said the farmer, "you might have picked the whole orchard, and welcome, had you told me at the time."

Jack argued that all the trouble arose because the farmer would not listen to argument; but the farmer only replied that if Jack preferred to steal apples instead of asking for them he might do so, and should not be interfered with.

These experiences induced Jack to believe that his father's philosophy would not work on shore, so he persuaded his father to let him go to sea. Happily he went on board a ship the captain of which, besides being a good-tempered officer, was especially indebted to Mr. Easy.

Jack was four years at sea, during which period he was completely cured of his ideas of "equality."

While at sea the news came of his mother's death. This event was followed by Mr. Easy filling his house with all sorts of rascals who took advantage of his belief in the "rights of man." Jack returned home, secured the legal right to the control of his father's affairs, sent these interlopers away, and obtained the arrears from tenants who had not paid their rents.

JACK BECOMES COMMANDER OF A PRIVATEER AND WINS A WIFE

Then he bought a brigantine with "letters of marque," which means that he became a privateer, or a commander licensed by the Government to attack the ships of Spain, with which England was then at war. After seeing active service in command of this vessel, he brought home as his wife a beautiful Spanish lady, to whom he had given her liberty when on an earlier occasion he had found her on board a vessel captured as a prize.

Meanwhile his father died a victim to a curious invention for altering the "bumps" of people's heads, but not before his son had had an opportunity of proving that he could now argue as well against equality as he had formerly argued for it.

"Were," he said, "all equal in beauty, there would be no beauty, for beauty is only by comparison; were all equal in strength, conflicts would be interminable; were all equal in rank and power and possessions, the greatest charms of existence would be destroyed, generosity, gratitude, and half the finer virtues would be unknown."

The next stories of Famous Books begin on page 2285.

A WOMAN AGAINST A KING

CONTINUED FROM 2002

The Earl of Nithsdale was condemned to death for trying to put James, the Old Pretender, on the throne in 1715. His wife heard of his imprisonment in the Tower, and came up to London from Scotland, travelling through deep snows. But the Governor of the Tower would only allow her to enter on condition that she remained a prisoner. However, she could not then have helped her husband; so she bribed the guards, got admission daily, and quite won their confidence.

After fruitless attempts to obtain a pardon from King George I., Lady Nithsdale made up her mind twenty-four hours before the time of execution that she would help her husband to escape. At first he would not listen to her plan, lest it should endanger her, but at last he yielded.

The evening before the date fixed for the execution of the earl and other prisoners, Lady Nithsdale took two women with her into the Tower, and in turn brought them to her husband's room to take farewell of him. The first, a Mrs. Mills, wore concealed garments, which the second, Mrs. Morgan, put on when quitting the Tower; for Mrs. Morgan took off the outer garments she wore and Lady Nithsdale put them on her husband. Every little detail was thought out beforehand, and the cleverness, skill, and presence of mind shown by this resolute woman were very remarkable. Mrs. Mills was directed to come in, crying and afflicted with grief, so that when Lord Nithsdale, who personated her, went out, he did so wearing a hood and with his face buried in a handkerchief to cover up his beard. Lady Nithsdale walked close behind him for a little distance to conceal his manly gait, and then returned to his empty room. The pretended Mrs. Mills had been hurried off to fetch Lady Nithsdale's maid.

In the deserted room, Lady Nithsdale carried on a pretended conversation with her husband, asking questions and imitating his voice in answer, as well as striding up and down to make the people in the outer room think her husband was still there. Thus she allowed time for him to get clear of the Tower; then she opened the door, and, standing half in the room with hands on the door, took a pretended farewell for the night, pulled the string through the latch of the door so that it could only open on the inside, and, telling the servant he need not trouble to take in candles, passed down the stairs and drove off in a coach.

The whole story, related by Lady Nithsdale some time after, shows wonderful self-control, skilful acting, and self-sacrifice, for she was hazarding her own life. King George was furious when he found what she had done, and issued orders for her arrest; but she escaped by her own clever wits, fetched her little boy from Scotland, and joined her husband in France. To this day her descendants treasure the shawl used as part of the disguise worn by the earl.

THE GIRL WHO WALKED TO LONDON

The girl about whom this story tells was born about two hundred years ago. She was the daughter of quite poor people, who were living in Scotland. Now, there was a law made at that time which was very unjust, and the punishment for breaking this law was death. Our heroine, whose name was Helen Walker, had a younger sister whom she loved very fondly, and this sister was charged with breaking the cruel law; and, though she was innocent, it was almost certain she would be condemned.

But it so happened that if Helen had been willing to tell the judges a falsehood, which no one could ever have found out, her story would have been taken as a proof that her sister had not done what she was accused of. She could have saved her sister by telling a lie, and no one would have known.

But Helen had been taught that there is nothing in the world which can make it right to tell a lie. She would have given her own life gladly to save her sister; but she could not have uttered a falsehood to save herself, and she would not utter a falsehood to save her sister. The sister was not like that, and, when Helen went to see her in prison, she pleaded passionately, begging her to tell the lie, and reproaching her for her cruelty in refusing to do so easy a thing merely because it was wrong. Some people, too, would have told her that it would not really be wrong with so good a reason for it. But Helen would not do it, in spite of all temptation.

But, if she would not lie, there was still one way in which she might perhaps save her sister. The judges would condemn her to death; but if Helen could win the King's pardon she would be set free. But what chance was there of getting the King's pardon? The King lived in London, hundreds of miles away. How could a poor girl in Edinburgh get to the King in London? To go from Edinburgh to London nowadays does not seem very alarming, but two hundred years ago it was a very different thing. There were no trains. Great people could go in their carriages, or gentlemen might go on horseback; people who could afford it might take the coach. But there was nothing for a poor girl like Helen but to tramp the whole long journey on foot, day after day, with just the chance of a friendly lift from a cart now and then; so the journey would be weary and long. Worse than that, it would be dangerous, for in those days highwaymen and footpads and tramps often attacked people who were going along the country roads alone. But it was the only chance of saving her sister, and, starting on her long walk, she did reach London in safety.

Now, in London there was a great Scottish lord living, the Duke of Argyll, to whom Helen's father had once done some service. So, when she got there, Helen sent a letter to the duke to entreat him to help her to get speech with the Queen, for the King himself was away from England. The duke admired her courage and her truthfulness so much that he did help her. And when she came before the Queen, she pleaded so movingly, showing that her sister was really innocent, that she persuaded the Queen; and the pardon was granted.

This is a true story, and out of it Sir Walter Scott made up the story of "The Heart of Midlothian," which is told on page 1757; and so, because his heroine, Jeannie Deans, will never be forgotten, the fame of the real Jeannie—Helen Walker—and of her golden deed will live for ever.

The next Golden Deeds are on page 2317.

WHAT THIS STORY TELLS US

WE have already studied the use and care of the teeth. Besides the teeth, however, there is much more of interest and importance in the mouth. In these pages we study the lips, the lining of the mouth, and the fluid which it produces, and we learn that when we eat there pours into the mouth something that makes chemical change in the food to prepare it for its entry into our blood. The importance of chewing is that it helps this saliva to do its work upon the food. The last part of the mouth we have to study is the tongue, a wonderful muscular organ which is of the greatest importance not only in speaking, but also eating and tasting. We learn here, also, about the different kinds of taste, and why it is good for us that we are able to taste at all.

THE MOUTH AND EATING

CONTINUED FROM 2100

THE lips are very interesting and important. They should meet so that the mouth is closed, except when we eat or speak. The mouth is not meant for breathing, as we have seen. The lips are very richly supplied with nerves. That is one reason why they are sensitive and pleasant to kiss with. Their rich supply of nerves, making them sensitive, is also valuable because they are the guardians of this entrance to the body; and grit, and prickly things, and anything that is not fit for food, is delicately felt and recognised by the lips, which close and refuse to allow the unsuitable thing to enter, or else spit it out. It is very interesting and instructive, in the case of very small children, though it may annoy their parents, to see how quickly their lips detect and reject anything which they do not think suitable to swallow.

The lips are lined with very thin and delicate skin, and as this passes into the mouth it changes into another kind of surface, called a mucous membrane. The lining of the mouth—and of most of the interior surfaces of the body—is called by this name because it produces a smooth, thickish stuff called mucus. This is a most valuable material, though it is rather troublesome when we have a cold, and our noses produce too much of it. It catches microbes, so that they do not penetrate beneath it; and it is slightly antiseptic, or poisonous to microbes. It catches dust, too. It ensures that, for instance, the inner surface of the lip and the surface of the gum shall move smoothly and easily against each other, and shall not stick. It is thus like the "lubricating oil" that is put into machinery—say, into the bearings, of a bicycle or a motor-car—so that it may work smoothly. Also it covers over our food before we swallow it, so that it slides down smoothly and easily.

The production of mucus by the mucous membrane of the mouth is under the control of the nervous system, and can be disturbed by worry or fear, so that the mouth becomes dry and we can hardly swallow. Sometimes in India when one of a number of people is suspected of having stolen something, they are all made to take a mouthful of some dry food, like grain or rice, and are told to swallow it. The guilty person's brain is frightened and upset, and he cannot produce enough mucus to soften and coat his mouthful, and the consequence is that he cannot swallow it, and so is found out.

Into the mouth there also pours, when we eat, or see something we want to eat, a quantity of a very watery fluid, quite different from mucus, which is called saliva, or spittle. That is why we say our "mouth waters" when we see something nice. Saliva is not produced in the mouth, but in special glands that lie in front of the ear, and also under the jaw—three in all on each side. They are called the salivary glands, and in poisonous serpents they produce the poison. The teeth that lie nearest the openings of these glands are usually the last to decay, since saliva is alkaline, and, as we have seen, combines with the acids that would destroy the teeth—so that they are saved.

WHAT MUST HAPPEN TO OUR FOOD BEFORE IT CAN BRING US STRENGTH

We have lately learned that saliva is very important indeed. It is not merely that it softens the food. It contains a special ferment, a very complicated chemical substance which has the power of turning starch into sugar. It can do nothing else; but there is starchy material in most of our food, and this starch must be fermented into sugar before it can be used by the body. In fermenting it is made into a liquid, and this helps to break up the food so that the rest can be more easily digested—that is, fermented—when it reaches the stomach. The stomach has no power whatever to digest starch, and so it is a very serious matter if enough saliva, containing the starch-ferment, is not produced in our mouths and thoroughly mixed with the food when we eat.

If we bolt our food, that is what happens; we lose the value of much of it, and often get indigestion. On the other hand, if we thoroughly chew our food we get plenty of saliva into our mouths. It has been proved that chewing brings the saliva into our mouths; indeed, we can notice this for ourselves.

HOW TO EAT—A VERY IMPORTANT THING THAT EVERYONE SHOULD KNOW

As we chew, saliva and food get mixed together; then a round lump of the mixture gets smoothly coated with mucus, and it is *now* ready to be swallowed, but not before. When it reaches the stomach, the starch is digested by the saliva and turned into sugar, in which form it can be taken into the blood and used to give us warmth and strength. The digestion or fermentation takes place in the stomach; not the stomach, however, but the salivary glands produce the ferment that does the digestion. Therefore this is the one part of the business of digesting our food that we have under our own control, for we can chew or not, as we please.

If this first stage in digestion is properly carried out, it helps all the rest, as we have seen, because the melting out of the starch from among the food enables the juices of the stomach to get at the rest of it; and in everyone but those who are really ill the whole business of digestion, from first to last, will go on well and easily *if* we have been wise enough to start it rightly by chewing our food properly. Everyone should know this, and every child should learn to chew. It does not take long before we get into the *habit* of chewing properly. If we take the trouble to attend to it at first, after a time the brain gets accustomed to making the jaws work properly before anything is swallowed, without our having to think about it. That is a good habit, and one of the best. Nor is it at all more difficult to learn than bad habits; and they are easy enough to learn, I am sorry to say.

PROPER EATING IS THE FOUNDATION OF GOOD HEALTH AND USEFULNESS

I know that we find it tiresome to be told, again and again, to chew our food properly before we swallow it; but the habit of breathing only through the nose, about which we have already read, and this habit of chewing properly, lie at the foundation of good health, which means the first condition of happiness and usefulness in this world. It would be a waste of time to study the body and learn how it is made, and how it works, if we could not thereby learn how to keep ourselves well; but we *can* so learn, and that is the best reason why we should study the body, even until we know a thousand facts about it for every one that we know yet. We know very little really, but we should act on what we do know, and then our *knowledge* becomes a better thing still, and that is *wisdom.*

I have not told you the name of the ferment in the saliva, nor the names of the various salivary glands, nor have I written the chemical equation which shows how starch is changed into sugar simply by combining water with it. These things are interesting, but they do not matter. What really matters is to know what is our duty to our own bodies, and to do it.

But in studying the mouth we find, besides the lips that bind it, the mucous membrane that lines it, the teeth that arm it, and the saliva that pours into it, another wonderful organ, and that is the tongue.

THE CLEVERNESS OF THE TONGUE, WHICH HELPS US TO EAT AND TO SPEAK

There is scarcely any end to the usefulness of the tongue. That is true of the tongues of the lower animals even ; but it is still more true of our tongues, as they are used by us for speaking with. So important is the tongue as an organ of speech that we often say " a foreign tongue " when we mean a foreign language, and even when we say language we refer to the tongue, for *lingua* is Latin for the tongue.

The tongue is really a group of muscles —some running along it from root to lip, some running across it, and so on. Any of these muscles can be used apart from the others, or in combination with them, so that we can move the whole tongue in any direction ; we can lengthen it or shorten it, we can hollow it out to make a loud noise as a baby does when it cries, and as every good singer has to learn to do, or we can make it arch itself like the back of a cat, as we do when we pronounce the vowel e. It is one of the most remarkable things about our bodies that we can use for special human purposes, like speaking, organs which the lower animals have, and which were not originally meant for such purposes.

For the tongue's most ancient uses, to which we still put it, are quite different. It searches the mouth, and finds the food in it. In some animals, like monkeys that have cheek-pouches, it stows the food away till it is wanted. Little boys—and girls, too—sometimes use it for this purpose when they have sweets given to them.

THE WONDERFUL WAY IN WHICH THE TONGUE HELPS US AT MEALS

The tongue is used every time we swallow. It is the clever tongue that moves the food about so that it shall be properly caught between the various teeth, and cut up, and chewed ; it is the tongue that rolls a portion of a mouthful into a round ball, slips it on to its own surface, far back, and then tosses it into the throat, where it is swallowed. Try to eat or to swallow without moving your tongue, and you will soon learn how useful it is.

The tongue, too, keeps the mouth clean and free from anything it does not want to swallow. It is the tongue that discovers the bone in the fish, and catches it and pushes it to the lips so that we can get rid of it. So, like the lips themselves, it is a sort of sentinel, letting pass into the interior of the body only what it thinks right. We do not use our tongues for washing anything but our mouths and the outside of our lips, but many animals use it as sponge, and towel, and nail-brush as well as tooth-brush—which is a purpose we all put it to. Watch a cat washing herself or her kittens, and see how useful her tongue is in this way. Then you may let your finger rub against the surface of her tongue, and you will find it very rough indeed. The cat's tongue is far rougher than ours, and here again is a lesson as to the kind of food we are best suited for. The cat is a carnivorous, or flesh-eating, animal, and its tongue is a rasper, or grater for flesh.

THE FOUR KINDS OF TASTE THAT THE TONGUE GIVES US

The tiger's tongue will draw blood from your arm if you allow it to lick you. When we examine the tongue of such an animal, we see that it is armed with a number of sharp things standing up from it, and curved backwards.

Our tongues are comparatively smooth, for we are certainly descended from creatures which were vegetarian, and did not need such rough tongues as the tiger scrapes his bones with when the keeper feeds him

But, beyond all these other uses, the tongue is wonderful because it is the organ of taste. It is covered with special little points, to which the nerves of taste run from the brain. These taste-bulbs, as they are called, are most abundant on the sides of the tongue and at its tip. They are much fewer on the back of the tongue, which is more used for rolling and throwing the food into the throat. Different parts of the tongue are different in their sensitiveness to different kinds of taste. There seem to be four principal kinds of taste, and it may be that there are special nerves, and perhaps special taste-bulbs, in the tongue for each of these kinds. They are *sweet*, *salt*, *acid*, and *bitter*. Other tastes, which we cannot call exactly any of these four, are probably made up of mixtures of these, and also of smell. Smell has more to do with what we call the taste of our food than we fancy. When we have a cold and cannot smell, our food does not taste nearly so nice.

THE POWER OF TASTE AND ITS USES TO US ALL

We may notice that two of the classes of taste—acid and salt—correspond to two great classes of chemical compounds about which we read on page 1797 of this book. Sweet corresponds to the compounds called sugars; and bitter things perhaps belong to a special chemical class, too. We must never confuse *acid* with *bitter*, as many people do. They do not call bitter things acid, but often you may hear someone say that a thing is bitter when it is not bitter at all, but acid. They might just as well call it sweet. There is no resemblance at all between the taste of a lemon, which is acid, and the taste of quinine, which is bitter.

The tongue, then, besides being the principal organ of speech in human beings, is the organ of taste, and we should know what the use of the sense of taste is. We usually think of it as if it were just meant to give us *pleasure*. But none of our senses exist in the first place to give us pleasure. They exist for sheer usefulness. Music and beautiful sights give us pleasure; but the *first* use of the ear and the eye is that we may hear and see things, and so be helped in our actions. And though we use the sense of taste mainly for pleasure, its real business is the *use* of telling us what is and what is not fit to eat.

HOW THE TONGUE ACTS LIKE A SENTINEL TO GUARD US FROM HARM

Thus the tongue is a sentinel because it is the organ of taste as well as because it is an organ of touch, and can feel things, like bones, that it would hurt us to swallow. It is a sentinel *chemically*, because it tells us, by taste, what we require to know regarding the chemical composition of our food. It recognises sugar, and approves of it, because sugar is good for us. It recognises the things which are made in food when it goes bad, tells us that they are there, and that they are nasty. So we are saved from the harm they would often do to us if we swallowed them. The tongue, like every part of the body, may make mistakes; but the duty of telling us what is good and what is not is what the tongue exists for in so far as it is the organ of taste.

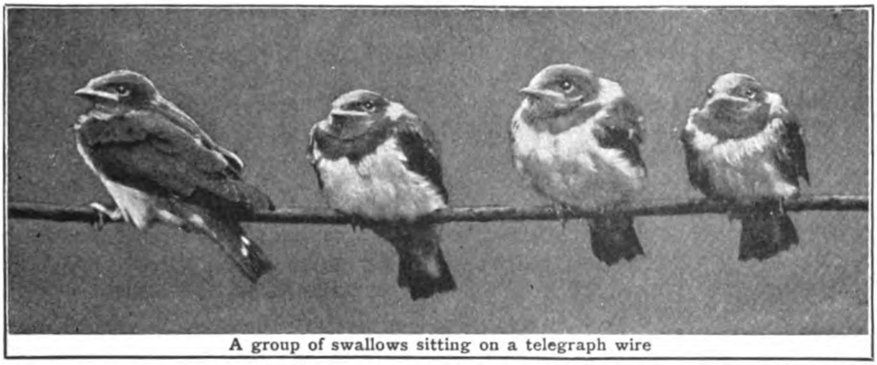
I do not think that the sense of taste exists in order to tempt us to eat. When we are really hungry, we can enjoy dry, stale bread, which has scarcely any taste. People who have lost their tongues or their sense of taste still get hungry, like other people. The power of taste exists not to persuade us to eat, but to help us to choose.

We see this when we say that a person has "good taste." We mean not that he is hungry for music, for instance, but that he *chooses* well between good music and bad music; and "good taste" in clothes does not mean that a man likes to be clothed—he likes that whether he has "good taste" or "bad taste"; it means that he chooses well between dull colours and beautiful colours, "loud" clothes and quiet clothes. Let us think of taste, then, as the chooser; and let us try not to cheat our tongues by adding large quantities of strong-tasting things to our food.

WHAT HAPPENS WHEN WE SWALLOW OUR FOOD

Lastly, the mouth and the tongue have the business of swallowing. When the food is prepared, but not before, it is placed on the back of the tongue near the throat. A hint is thus given to the brain, and the "swallowing-centre"—a group of nerve-cells in the brain which has this duty entrusted to it—gives orders which close the opening that leads to the lungs, raise the soft palate, or curtain, at the back of the roof of the mouth so that the food shall not pass into the nose, and contract the muscles of the throat in a regular wave, so that the food passes safely into the gullet. The gullet is a very long, muscular tube, which passes right through the chest, and through a passage in the diaphragm, finally opening into the stomach. This tube contracts from end to end, pushing the food along until, in four or five seconds, as a rule, it enters the stomach, where we must now leave it.

The next part of this is on page 2343.



A group of swallows sitting on a telegraph wire

FAMILIAR BIRD FRIENDS

CONTINUED FROM 2061

We come now to our last story about the birds, passing next to a trip into the lakes and rivers, and into the depths of the sea, returning afterwards to land to study some of the marvels of the insect world. We shall all miss from the story of the birds some of the friends in feathers in which we are interested. In a series of short stories like these it is impossible to deal with all the enormous number of birds that exist. All that we can hope to do is to spend pleasant hours in studying a little of the ways of birds whose lives and habits are interesting to the greatest number. Our stories serve as an introduction to the world of animal life; no stories can do more than that.

In speaking of common birds we have to deal with birds which should be common in our own land. Unfortunately, as we have so often seen in previous stories, the birds which should be among those most abundant are getting more and more uncommon, owing to the ruthless cruelty with which they are being destroyed.

One which becomes every year more scarce is our handsome, saucy friend the jay—a feathered prince of our woodlands in many parts of the country. There is no mistaking it for any other bird, for the jay is a big bird, nearly a foot in length from the beak to the tip of the tail, and with his tall crest and the bright blue and white plumage, and his loud, joyous, laughing call, he is quite a notable figure. If we fail to see him, he will make us know of his presence. With a loud, screaming squawk, he flutters off, arousing by his cry all the birds in the neighbourhood to the fact that one of those dreadful two-legged creatures which have clothes instead of feathers is on the prowl. As a destroyer of insects the jay is a blessing to the farmer. But he is such a hungry fellow that insects do not satisfy him. He must have the choicest fruit in the orchard, and should the eggs of song-birds or game-birds, or even young birds themselves, appear in his neighbourhood, the jay will have them. He is a member of the crow family, hence his hearty appetite.

Now, because he takes an egg or two, or even a bird or so, in the course of the year, farmers hunt the jay without mercy. They care nothing for the enormous good he does in cleansing crops of their burden of caterpillars.

There is another fact in favour of the blue-jay of which the farmer takes no account. This bird loves acorns. The scientific name of one species means noisy acorn lover When the acorns are ripe, the jay carries them from the oak-tree with a view to hiding them as a winter store. Some he does hide, others he drops because he is so ill-mannered as to talk with his mouth full. Anyhow, from those acorns which jays and other birds have buried and forgotten, many of our oak trees have sprung. From an acorn an oak-tree will grow, and in due season it will yield thousands of other acorns, which other jays may take and hide for other oak-trees to grow from.

HOW THE BIRDS CARRY SEEDS OVER THE OCEAN, AND PLANT BARREN ISLANDS

That brings us to a remarkable feature in the life-story of the birds. Men reap harvests which the birds have sown. Barren islands have been clothed with verdure from seeds which the birds have carried. Birds do not deliberately set forth upon a journey with a view to sowing seeds. In their annual migrations from country to country they carry with them seeds from land to land. The fruit that they eat contains seed which, when liberated, will grow. It will not grow, of course, if it has been digested by the bird; but if it has not been ground up or damaged in the bird's inside, it will grow when deposited on the land to which the bird has flown.

In the course of their journeys birds get blown far out of their course, and are often glad to rest on islands by the way. Thus the seeds which they have carried may be deposited there. It may happen even more unexpectedly. A bird may be caught by a hawk or other bird of prey when on its annual flight. In its crop may be the undigested food which it ate before setting out. The hawk may swallow this, but as it is not the food that the hawk wants, the seed will be cast up, with the feathers, in little pellets from the hawk's mouth, and so find a resting-place in the soil. In the course of a day a bird may have flown 500 miles with seeds in its crop. The hawk eats the bird and flies far to land before casting up the seed.

EIGHTY-TWO PLANTS THAT GREW FROM EARTH FOUND ON A BIRD'S FOOT

Thus we see what a journey the seed may have travelled in a day. When it does reach the ground it will grow, if the soil and climate be favourable, and in that way a country gets a growth which it may never before have possessed. There is another way in which birds carry seeds. Clods of damp earth sometimes cling to their claws, and in these clods are tiny seeds. Darwin examined the leg of a red-shanked partridge to which was attached a ball of earth weighing 6½ ounces. The ball of earth had been kept hard, just as it was found, on the foot of the bird for three years. Darwin broke it up and found that it contained seed. He planted and watered them, and from the seed in the ball of earth which had stuck to that partridge's foot there grew up no fewer than eighty-two plants. Many other birds were examined by the same great man which had earth-clods attaching to their feet or the sides of their beaks. One had a piece of earth attaching which weighed only nine grains, but from it there grew and flowered a toad-rush.

Of course, not all the uninhabited islands upon which verdure grows have been sown in this way; wind and tides carry seed which live after many days' immersion in the water of the sea, but the birds for thousands and thousands of years have been doing their share, and the fact makes their migrations all the more interesting.

WHY THE BIRDS LEAVE IN AUTUMN AND RETURN IN THE SPRING

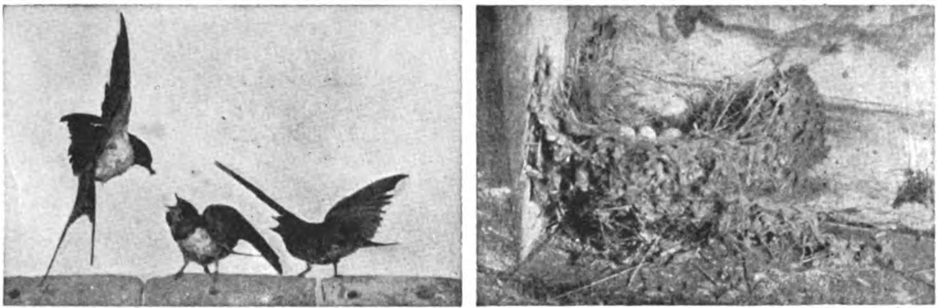
The migration of birds is a mystery to most of us. At about the same date every year our wanderers come home to us for the summer, and at about the same date every autumn they leave us. The going and returning may vary a little, if the weather be of an unusual character; but the journeys are sufficiently regular for us to be able to make up a little bird calendar, which reads something like this:

Name of Bird	Leaves Ohio (say)	When it Returns	Days Away
Cuckoo	August 25	April 14	232
Oriole	October 10	April 22	194
Martin	October 12	April 14	184
Swallow	October 15	April 10	177

The movements of the birds which come from colder climes to spend the winter with us may be timed in pretty much the same way, and it is possible to work out a list of the birds' travels just as it is to make a clock from the opening and shutting of flowers.

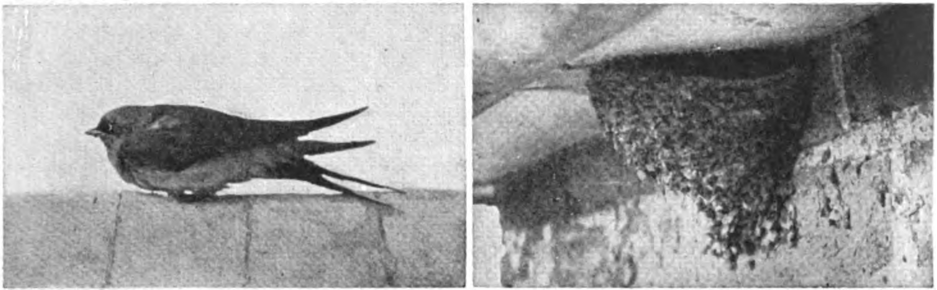
Why the birds migrate we know; how they are able to find their way as they do is another matter. When the summer passes, our fair-weather friends find their food growing rapidly scarce, and the weather getting too cold for

THE SWALLOWS THAT HERALD THE SPRING



The swallows eat nothing but insects, and cannot do anything but good. They are wonderful builders, making nests of mud beneath the eaves or roofs of barns, to which they carry the materials a beakful at a time.

Starlings work with fine appetites in ridding the fields of worms and grubs and all manner of things which would injure the crops. Then, when the fruit ripens, they think they are entitled to dessert, and help themselves.



The European house-martin builds close to the windows, making the neatest little home. Should the lodging be insecure it builds a solid foundation for its nest, resting the latter upon a pedestal of mud or clay.

The swift is the speediest of all our birds, and is built like a humming-bird. **The Chinese eat certain swifts' nests.**

*The jay is a noisy gentleman, from whose beak drop acorns which sow **oak-forests. He eats birds' eggs.**

Sand-martins are charming little birds, which build in sandstone **cliffs and railway embankments.**

* Copyright by Underwood & Underwood, N. Y.

them. Therefore, instinct impels them to fly to lands where they know that the sun is shining and food abundant.

It is wonderful to think that the swifts or swallows which we see about the house on some fine morning midway through October will next day be revelling in the sunshine of Florida.

THE WONDERFUL WAY IN WHICH THE BIRDS COME BACK TO THEIR OLD HOMES

It is sad, of course, to be without them after they have gladdened us with their presence all the summer; but there is comfort in the thought that, all being well, the very same birds will come back to us in the spring. Yes, the same birds. The wood-thrush finds its way back to the bush on which its nest was made the year before, and the swift and swallow come back, year after year, to the very house where their nest was built. One swift is, to our eyes, exactly like another swift, so there may be a mistake, we think. To guard against error birds have been marked, and from the marks made upon them they have been identified as returning to the same house for seven years in succession.

Those people who tell us that the wind decides whither a bird shall fly, and that there is nothing wonderful in these migrations, are right up to a certain point. The birds may fly with the wind, which blows them south in the autumn; they may come back to us when the spring breezes, sweeping over the plains, carry the scent of our fair land into the heart of Mexico. This may be true, but the wind does not parcel out myriads of birds and dot them down all over America just at the particular spot where each bird desires to be. The "homing" instinct is as strong and wonderful in our swifts and swallows as in the homing pigeon.

THE LITTLE GIRL'S SECRET AND THE SECRET OF THE BIRDS

The birds are like the little girl who found the way to her home, a house in a street where all the houses were exactly alike. She could not explain how she found the house; all she knew was that in a certain house in that street there was her little yellow bed upstairs, and she went unerringly to the house which contained it. And it is to their little beds upstairs that the birds return year by year.

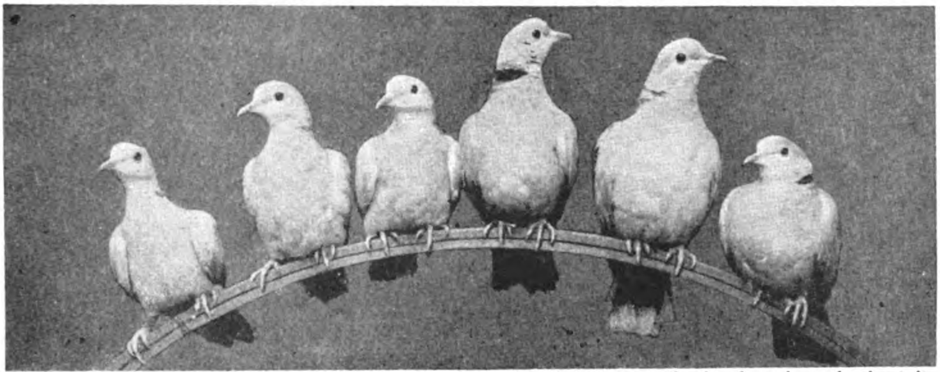
It is not hard to distinguish between swallows, swifts, and martins. The swift has long, sickle-like wings and a short tail. The swallow has long, pointed wings, but the distinguishing mark is its forked tail. This is the barn-swallow, whose nests are plastered up inside our barns, looking like little brackets of mud. It is blue-black above, and has a chestnut throat and breast. Then there is another something like it, but much smaller, and with a short, square-ended tail, which makes rows of bottle-shaped nests of mud outside the barn, close up under the eaves, and is called the eaves-swallow. The big purple martin, which nests in the houses on poles set up in the garden, is a near cousin of the swallow's. The swift, though of similar form, is really a relative of the humming-bird, as we might guess from its wonderfully swift flight. It makes its nest of little twigs glued together and to the wall inside a disused chimney; but before there were houses, the swallows nested on rocky ledges, and the martins and swifts in hollow trees. All these birds live on minute flies and other insects which they snap up as they sail and dart through the air.

BIRDS THAT BUILD IN TUNNELS AND NESTS THAT ARE GOOD TO EAT

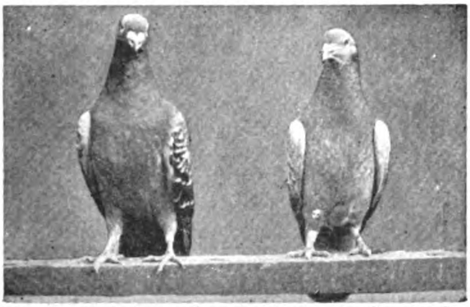
The sand-martin is a smaller bird than these, has a shortish, forked tail, is brown on the back and wings, and white underneath, except the upper part of the breast, where brown again occurs. Its home is made in the sides of sand-pits, the banks of rivers, railway embankments, and so forth. It digs itself a neat little tunnel, eighteen or more inches in length, and there it lays its eggs and hatches its young in security. One martin, which does not come to America, makes a tube of mud beneath a rock or on a wall, and builds its nest at the top of this spout. Swifts' nests are made in holes in rocks, in crevices, in cliffs and walls, and very often in the thatched roofs of houses.

It is a member of the swift family which builds the famous eatable nests. The nest is made from a substance produced from the swift's mouth. It is all glued together and fastened to a rock in some wild cave. There men are let down by ropes to get the nests.

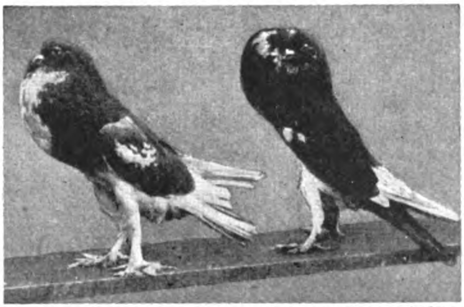
BIRD POSTMEN AND BEAUTY PIGEONS



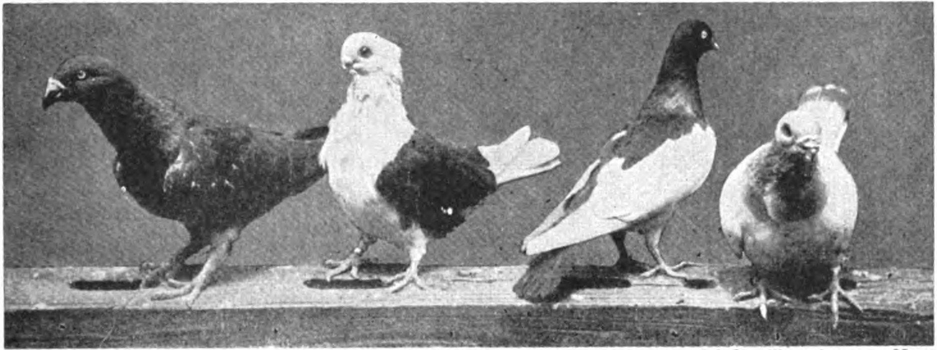
The ring-dove is one of the tamest birds of its race. It will feed from the hand, and perch about its owner without the least fear. It is called turtle-dove, but the real turtle-dove is a beautiful wood-pigeon.



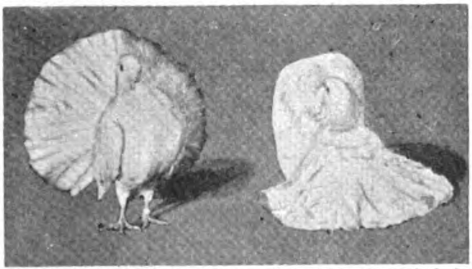
The homing pigeon flies hundreds of miles to its home, and can carry messages tied to its legs. In many places they have regular "pigeon-posts."



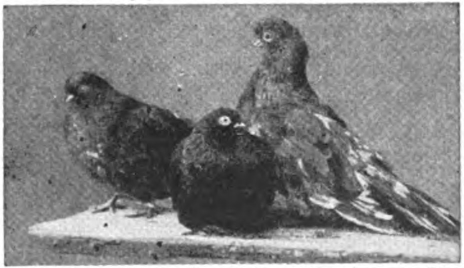
Pouter pigeons are strange birds which can inflate pouches in their breasts when angry or in love. Other pigeons can do so a little, but not like the pouters.



Here we have four popular breeds of pigeons. On the left is an Antwerp—a powerful flier like a homer. Next comes the short-billed turbit; then the trim magpie, and last the blue owl-pigeon. The latter three are fancy birds.



The fantails, which are generally white, expand their breasts and spread their tails like a fan, raising them over the back till they touch the back of the head.



There are many varieties of tumbler pigeons. One of the most costly is the short-faced tumbler. The shorter the beak the more valuable the bird for selling.

The photographs on these pages are by Charles Reid, R. B. Lodge, Lewis Medland, Henry Irving, and Underwood & Underwood, London.

The Chinese consider these nests a great delicacy. Millions of them are taken every year to China. The price is about ten shillings an ounce, and there are about three nests to the ounce. They are washed and stewed and made into soup, but it takes a Chinaman to like it. The nest of the British swallow is cup-shaped, and placed under a roof or down a chimney. It is composed of mud or clay, which the patient birds carry little by little from some convenient spot, then piece it together.

HOW THE STARLING PAYS FOR THE DAMAGE HE DOES TO THE FRUIT

Just as familiar as the swallows is the starling, a bird which thrives in England, and is becoming naturalised in America, showing us its glossy, sheeny feathers, with the purple and green metallic reflections and the countless brown spots. It is useless to deny that it is a robber of the orchards; but when the fruit is not ripe, the starling earns his place in the world. Starlings eat slugs, worms, and beetles of all sorts, which, if left alone, would overrun the farmer's lands. One quiet autumn afternoon, when there seemed to be very few starlings about a certain big garden in the country where they are very plentiful, some friends walked out along the road down to some fields. One of these had been newly ploughed. As the friends approached, there was a great commotion among the brown soil. It looked as if the whole surface of the field moved and rose. But in an instant the meaning was clear. Thousands upon thousands of starlings, which had been feasting upon the enemies of the farmer in that field, suddenly rose into the air and passed over the heads of the friends as they walked. For a minute they blotted out the sky. They had done a good afternoon's work for the farmer, even if they had taken toll of his fruit earlier in the autumn.

A FLYING COLUMN OF PIGEONS 200 MILES LONG AND A MILE WIDE

Talking of this swarm of birds reminds us of one of the greatest swarms ever known, the swarms of the passenger pigeons in America. They used to pass over the country in multitudes which no man could number. One observer watched them during a journey of 54 miles. All the way the mighty flock of birds streamed over his head, in clouds which hid the sun, and for that day, and for three days following, the flight continued. Another scientist watched the birds in flight, and calculated that they made up a column a mile in width and about 200 miles in length. They were going to where food would be plentiful, so that they might build nests in the trees and bring up their young in the midst of abundant provisions. One of these nesting-places was measured. It covered a space twenty-eight miles long and from three to four miles wide. Every tree of any size in that great area was crowded with nests of these birds. That was a little over thirty years ago. Since then the woodman's axe has felled so many American trees, and the guns of men have killed such swarms of these birds, that the passenger pigeon of America is now becoming as scarce as the American bison.

We have another wild dove in this country to-day; but have more home-reared pigeons than wild ones. They are all descended from the parents of the blue rock-pigeons wild in England to-day.

THE PARENT OF ALL OUR PIGEONS, THE ROCK-PIGEON OF TO-DAY

The blue rock-pigeon is one of the birds whose plumage very seldom varies. Son is like father, and daughter is like mother. It is bluish grey, of a darker tone than that of what we call the blue homer; and across the closed wings run two broad, distinct bars of black. The neck of the bird is beautifully marked with blue and purple reflections. Indeed, the necks of most pigeons, wild and tame, would do credit, for sheer beauty of plumage, to a peacock. We may call the wild pigeons doves if we like. Doves *are* pigeons.

There are two sorts living in British woods. There is the stock-dove, or smaller wood-pigeon; and there is the ring-dove, the largest of the wild pigeons. This is a shy bird, but its increased numbers show what can be done where birds are kindly treated. It has become very numerous in the London parks; and in parts of London with gardens in which timber still stands, it is no uncommon sight, early in the morning, or late in the evening, to see these beautiful birds swoop down to pick up food which has been put there for other birds. Not long ago two of these birds used to visit the London garden of people who did all they could to encourage the birds. Next year eight ring-doves were to be seen in and near that garden, showing that the birds had made their nests and reared their little ones in gardens within a few miles of the city.

The wild rock-pigeon eats small shell-fish from the seashore for a part of the year, but at other times it takes grain and seed. A good flock of them can do the farmer's crops some damage.

HOW THE STRUGGLE FOR EXISTENCE IS SHARED BY GENTLE DOVES

The pretty cream buff-coloured doves which we keep at home must not be confused with the birds of which we have here been reading. They do not fly wild in this country. They are regarded as the gentlest of living creatures. But that is all nonsense. Birds are birds, and they all have their little tempers. Doves will peck little birds, just as the little birds which are pecked by the doves will peck birds smaller than themselves.

Just watch a couple of hen doves struggling for the same piece of material for their nests; they peck and beat each other with their wings with as much zeal as if they were a couple of robins. We must not think any the worse of them for that; they are charming birds to keep, affectionate and friendly with their masters, but their unending crooning may at times try the patience of the keenest bird-lover.

When we look at a first-class collection of pigeons, it is hard to believe that the neat and trim little rock-dove is the father of them all. See the great and lordly pouter with his huge swelling pouch. He stands high on feathered legs, with his head thrown back, and struts about, and claps his wings when flying as if he were the very lord of all the birds. Look, too, at the comical dignity of the fantail.

THE FANTAILS AND THE DRAGONS AND OTHER HANDSOME SHOW PIGEONS

By careful breeding we have a bird of beautiful white, with a fine fan-like tail, which curves over its back so as to touch the back of its head. The dragons and carriers are just as proud, but in a more severe and stately way. They are not beauties, except in the eyes of the fanciers of these birds. The huge, coarse, fleshy wattles round the eyes and nose make the bird look as if the beak had been thrust through them.

Far more attractive of the quaint birds are the Jacobins and nuns, with their curious but pretty arrangement of neck feathers, fashioned like hoods and rosettes. We have pigeons with owl-like heads, pigeons with handsome little frills on their breasts, pigeons with feet and legs feathered like farmyard fowls. The least fanciful is the homer, which is the least removed in appearance from the rock-pigeon. Indeed, boys often buy trapped wild pigeons in the belief that they are getting home-bred birds, only to find that they can never train the strangers to remain. It is the nature of the rock-pigeon to fly away to its old home, and that is the nature of the homer. When they become accustomed to a place, they return to it just as the wild birds return from far lands to their old homes. Pigeons which have been trained to return from long distances to their lofts are taken away in baskets by train and over the sea, and then liberated. With the most wonderful instinct they return unerringly.

HOW THE PIGEONS PLAY THE PART OF MESSENGERS OF THE AIR

In many places they are trained to carry messages. A note is written on a thin piece of paper and tied to the bird's foot. The pigeon is then thrown up into the air, and away it flies to its home. If it is a well-trained bird it will fly at once to its loft, where a man will be waiting to receive it, to take the message and give the bird a good feed. Newspapers get reports in this way where the telegraph and telephone are impossible. The memory of these birds is remarkable. If we buy a couple of full-grown ones which have been used to flying, we may treat them with the greatest kindness for months, but the first time we let them out, away they fly to their old home. The only thing to do, if we buy old birds, is to let them hatch young ones, and train those. Then, if the old ones do eventually fly away, we shall not be left without pigeons; the young ones will not forsake the home in which they were born. The homer pigeons fly straight forward; they are long-distance birds, but there are others, of the tumbler and tippler family, which will fly just as long, but always in wide, sweeping circles, round and round their home. For eight or nine hours at a time they keep in the air, affording a good answer to the question as to whether birds fly for enjoyment.

THE CHARMING FAMILY OF THE TITS AND SOME OF ITS FRIENDLY MEMBERS

We must leave the dovecote, with its scores of varieties of pigeons, its runts—giants of the pigeon family in Europe—its turbits and trumpeters, and all the other favourites. We must not forget to mention that in warmer lands they have beautiful crested fruit-eating pigeons, and other pigeons so gay in colour that they are called painted pigeons. But these do not appear in the ordinary American dovecote.

We pass now again into the open to take a peep at a charming family of the friendliest of birds, the titmice. These are little fellows, always alive from top to toe, and the very image of liveliness and good cheer. Europe is full of them, and very prettily dressed some of them are, and builders of wonderful nests; and there are others in other parts of the world. None, however, are more interesting and familiar than our own—the jolly little chick-a-dee, the clear-voiced crested "peto" of the Southern States, and half a dozen sorts gladden the hearts of the people in the Rocky Mountains and up and down the Pacific coast.

"I have finished my morning ramble, and am fairly seated in my study," writes Mr. Laugille, "when lo! a familiar voice calls me to the window. 'Chickadee-dee-dee, chick, chick, chickadee, chickadee-dee-dee'—most cheerful and winning voice of a winter's day! There they are, little black-capped titmice, or chickadees, finding a satisfactory repast in the frosted evergreens, where my eyes can detect nothing of the kind; standing upright, tipping forward, stretching upward, leaning to right and left, or hanging by their feet; so brimful of contentment, so sweet-spirited and confiding, with so much of the sunshine of hope in their voices, that they appear like bright and gracefully moving ornaments on the dark evergreens or leafless spray."

Our American titmice do not weave lovely pouches or delicate nests as do some of the foreign ones, but hunt up some deserted woodpecker's hole, or a convenient cranny in an old apple-tree, and after filling it with warm bedding, place in it half a dozen red-speckled eggs, from which presently come forth the oddest of little babies. Occasionally the tomtit will nip off a few fruit-buds in the spring, and some ripe fruit in the autumn, but we ought not to mind that; the buds or fruit which he has taken have contained insects, or he would not have wanted them. The tomtit is a terror to caterpillars. Two of them, which had a nest of young ones, were watched, and it was found that they carried caterpillars to their nest at the rate of thirty an hour all day long. We only want a few families of tomtits in the garden to lessen the work of the gardener and check the ravages of the caterpillars.

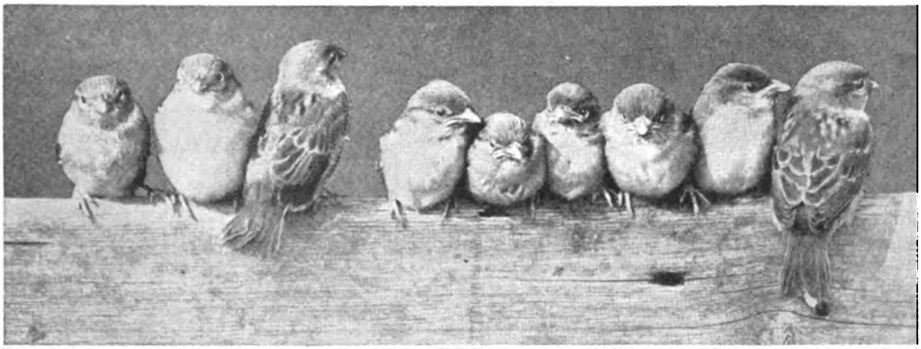
The long-tailed European tit has a very long tail. It has a white-crowned head and rich black back; the tail is black, but white-edged. This is the tit which makes the most wonderful bird-nest seen in England. It is marvellously formed, of soft, downy feathers, the webs of spiders, and the cocoons of caterpillars; while outside it are placed lichens, which match the trunk of the tree in which it is built, so making it hardly noticeable in its hiding-place.

HOW THE TAILOR BIRD WORKS WITH NEELE AND THREAD

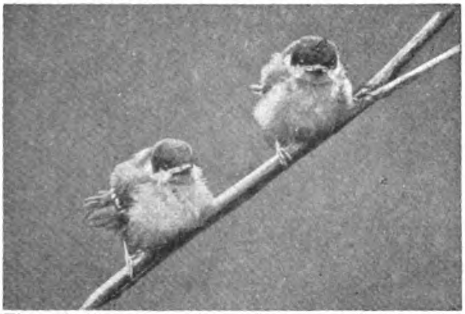
Talking of nests we must not forget that of the tailor-bird. It is one of our common birds, for its home is in the East, but it would be a shame quite to pass it over. The bird is quite a modest little creature, but it is a master craftsman. It sews together the edges of a big leaf hanging down from a branch If the leaf be too small, it stitches two together. How it learned to sew is a mystery; but sew it does. It collects strings of fibre or tough silk spun by caterpillars, or pieces of wool, and, using its beak as a needle, it threads these through and through the edges of the leaf, joining them together to form a sort of hanging cup.

Now for a word about the sparrow. There are more sparrows than any other birds in this country. They teem wherever we go, in the fields and parks, in crowded city streets and dismal alleys, Railway stations swarm with sparrows.

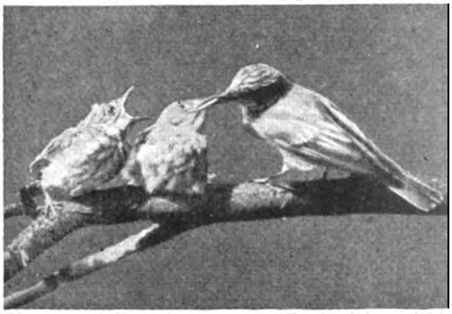
BIRDS OF THE STREETS, TREES, AND STREAMS



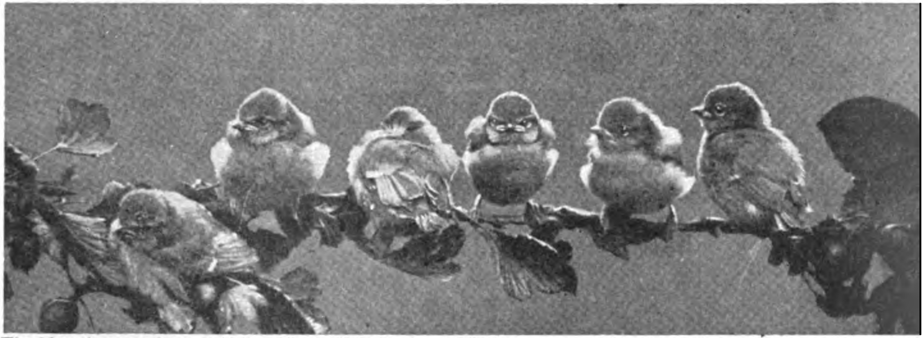
The sparrow goes everywhere and eats anything. With his perky, confident ways he cheers many a gloom slum where no other bird could live, and thrives where daintier birds would die. In the country he has few friend



The cole-tits are members of a popular family to be found in most parts of the Old World and the New. The long-tailed tit is the famous builder of the family.



The spotted flycatcher goes to England from Afric in May and hatches its young in June. It builds a ne nest and hides it with lichen and spiders' web



The blue titmouse is an untiring friend of the farmer. With its strong little claws it runs like a mouse over th fruit-trees, catching and eating the insects, which, if allowed to remain on the tree, would ruin the foliage and frui

There are nine species of wagtails. They love insects and catch minnows.

The great tit eats insects, but with his strong beak can kill small birds.

The nuthatch climbs like a woo pecker and digs insects out of tree the cabstands all have their own flocks. They build all about our houses, in the waterspouts, under the roofs, in outbuildings, in holes and corners, and in all imaginable places. Nothing discourages a sparrow. Painters, decorating the outside of the house where this is written, had to pull down a fat nest from behind a rainpipe. They gave the pipe a coat of paint, then went to work at the other side of the house. Next day, when they returned to the first side to give the pipes there another coat of paint, they found that the sparrows had rebuilt the nest which had been destroyed. The active little birds had been to a haystack near by, collected abundant material, and had re-established their house, not quite perfectly, but well enough to enable them to go on housekeeping.

It is around the sparrow that the great argument as to the value of birds centres. Men have formed a society whose members are pledged to kill rats and sparrows, and numerous clubs exist in the country solely for the slaughter of the poor sparrow.

WHAT HAPPENS TO THE FARMERS WHO KILL THEIR FRIENDS THE SPARROWS

The sparrow does steal much grain from the farmer. He is such a hungry little fellow that he robs without stint, and he even drives away birds more prized which he thinks may share his food. But when we resolve to destroy one of Nature's families, let us look back at what has happened to other people who have done a similar thing. The Government of Maine decided upon and carried out the slaughter of the sparrows some time ago, and in the following year, when there were few sparrows, the caterpillars multiplied so enormously that they not merely ate all the leaves of the fruit-trees, but actually killed the trees themselves. A similar thing happened in France. Therefore, let none of us take any share in trying to prove that men's ideas as to what should live and what should die are wiser than Nature's laws. If men did not kill the birds of prey there would be no plagues of sparrows or thrushes or starlings or any other birds. Men themselves upset the balance of Nature, and make matters worse by exterminating families of birds whose increase is the outcome of their folly and cruelty in regard to other birds. It is as if we dismissed all our police, then wanted to kill the watchdogs which keep out the thieves.

Nobody likes a plague of flies. They bring illness into our homes by carrying germs of disease into our food. Hundreds of birds help to keep down the numbers, yet among the thoughtless they have few friends.

BIRDS WHICH HELP TO GUARD OUR HEALTH AND OUR CROPS

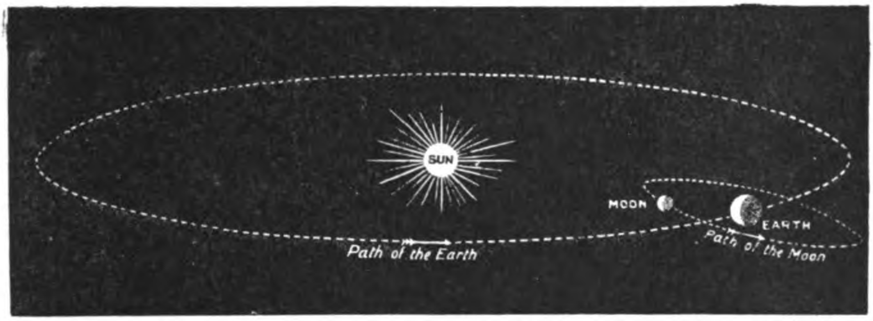
We have, as summer visitors, several species of birds, the flycatchers, which live entirely upon these little winged pests. The phœbe flycatcher is quite a common bird in places where men have much thought or few guns. It goes only to places where flies are most numerous, and is worth its weight in gold. The least flycatcher comes too, but not in such numbers as the other. Both ought to be carefully protected.

The nuthatch is another bird which the thoughtless would destroy, because it gets nuts. But nuts are not ripe until autumn, and the bird has been earning its wages all the spring and summer by picking off the insects and grubs with which the nut-trees are infested. The nut-trees of Kent would be better and more sound if the number of nuthatches were largely increased in that county. There is another excellent worker for our good in the wagtail, that jolly little bird which so swaggeringly flirts his tail as he runs across the lawn looking for insects, or hops gaily about the side of the pond. He is an insect eater, and no one should harm him.

THE CRUELTY AND STUPIDITY OF MEN WHO SLAY THE BIRDS

We have too few birds in America to wish to sacrifice any of them. Insect pests abound with us; flowers, fruit, and vegetables are ruined every summer's day by them. That shows that there is still work for the birds to do. Remove the birds which help us, and there will come such a plague upon our land as we can only picture from the story of Pharaoh's dreadful lot. Nature's laws are for ever. A man's life and experience are so short that he should not in his brief day attempt to sweep away his excellent little servants because they take something which is of value to him. After all, they honestly earn the grain and fruit that they take.

THE STORIES OF BIRDS END HERE; THE STORIES OF FISHES BEGIN ON PAGE 2335



THE MOON, THE LAMP OF NIGHT

CONTINUED FROM 2088

For many millions of years past, certainly not less than fifty millions, the earth has been attended by a *satellite*—which means attendant—called the moon. In all ages men have admired the moon, and in the history of almost all nations there are records that the moon has actually been worshipped. It is, of course, the most brilliant body in the whole heavens, after the sun, so far as our view of things is concerned; and, just as the sun is the king of day, so the moon is the queen of night, and on account of her beauty has been celebrated by thousands of poets. The whiteness of the moon's light has always been for poets an emblem of purity, though this light, as we know, is not made by the moon, but is merely reflected sunlight.

The time has gone when men thought that everything in the world existed only for their use, nor do we now credit the moon with the power of causing lunacy, which really means *moon*-acy. But we know that the moon has very important influences upon the earth. The most obvious of these influences is the light which the moon sends us, which at night may sometimes be quite useful. We have already seen how little of the sun's light the earth catches, and the moon, being smaller than the earth, catches much less. It has been reckoned that it would require 600,000 full moons, all shining together, to light the earth as brilliantly as the sun lights it now. The sun is always shining, and the side of the moon which is exposed to it is always lit by it, except for a few minutes now and again, when the earth gets between the sun and the moon. The proof of the fact that the moon gives out no light of its own is to be found in the changes that the moon goes through every month. These changes, which we are all more or less familiar with, can only have one meaning—which is, that all the light we see the moon by is reflected sunlight; and if the sun's light upon the moon is lighting the half which is away from our eyes, then we see no moon at all.

The only exception to this is that sometimes we can see what people call "the old moon in the young moon's arms." We see, perhaps, a beautiful bright crescent, and then the rest of the moon very faintly shown. The bright crescent we see by reflected sunlight, and the rest of the moon's face by reflected earth-light. This is one of the facts which prove that the earth, seen from somewhere else, would look bright. It reflects sunlight enough, indeed, to light up the face of the moon at times sufficiently for us to see it by.

The brightness of the moon depends on its nearness. In all the heavens there are only a very few bodies that we can see smaller than the moon, but the moon has the great advantage of being very much nearer us than anything else. Its distance from the earth is only about 240,000 miles—less than ten times the distance round the earth. Compared with the distance of the sun or of Mars, this is, of course, very small indeed. It gives us the great advantage that we can study the moon with our telescopes more closely than any other body in the heavens.

WHY THE MOON COOLED DOWN AND DIED SO QUICKLY

The moon, however, is very tiny, and the whole face of it, which we see, is only about twice the size of Europe. If you look at Europe on the map of the earth, you will see that that does not amount to much. The distance through the moon, or its diameter, is only a little more than a quarter that of the earth, and "if the earth were cut into fifty pieces, all equally large, then one of these pieces rolled into a globe would equal the size of the moon." But the surface of the moon is about one-thirteenth that of the earth. These figures are extremely important and interesting. They show us that when the moon is compared with the earth, it has a far bigger surface in proportion to its size. It is only one-fiftieth of the size, but instead of having a surface only one-fiftieth the size of the earth's, its surface is one-thirteenth that of the earth. That is why the moon has cooled so very much more quickly than the earth has done, and this rapid cooling of the moon accounts for two things: first, its cold and lifeless state to-day; and second, the character of the moon's surface, which shows that its life, so to speak, was "a short and merry one." The cooling crust of the moon shrank down upon its interior so quickly that the most violent things happened, the marks of which have been left long ages afterwards on the surface of the moon for us to study.

THE SIDE OF THE MOON THAT MEN HAVE NEVER SEEN

The fact that the distance across the moon looks to us always much the same shows that the moon's distance from the earth varies very little, and that is so. The reason is, of course, that the moon travels round the earth in a path which is very nearly, but not quite, a circle. It moves once round the earth in about twenty-seven days and a third. This time makes the real month, which we call the lunar month. There are twelve months in the year according to the calendar, but that has only been made so for convenience. Really there are thirteen and a little bit more; in other words, while the earth goes round the sun once, the moon goes round the earth a little over thirteen times.

But, as the moon goes round the earth, we find that she keeps the same side towards us. Indeed, we have never seen, and never can see, more than one half of the moon's surface, or just a trifle more than half. The reason is that the moon is slowly spinning upon itself as it moves round the earth, and it makes one complete spin on itself in just the same time as it takes to go once round the earth. In other words, the moon's 24-hour day is a month long.

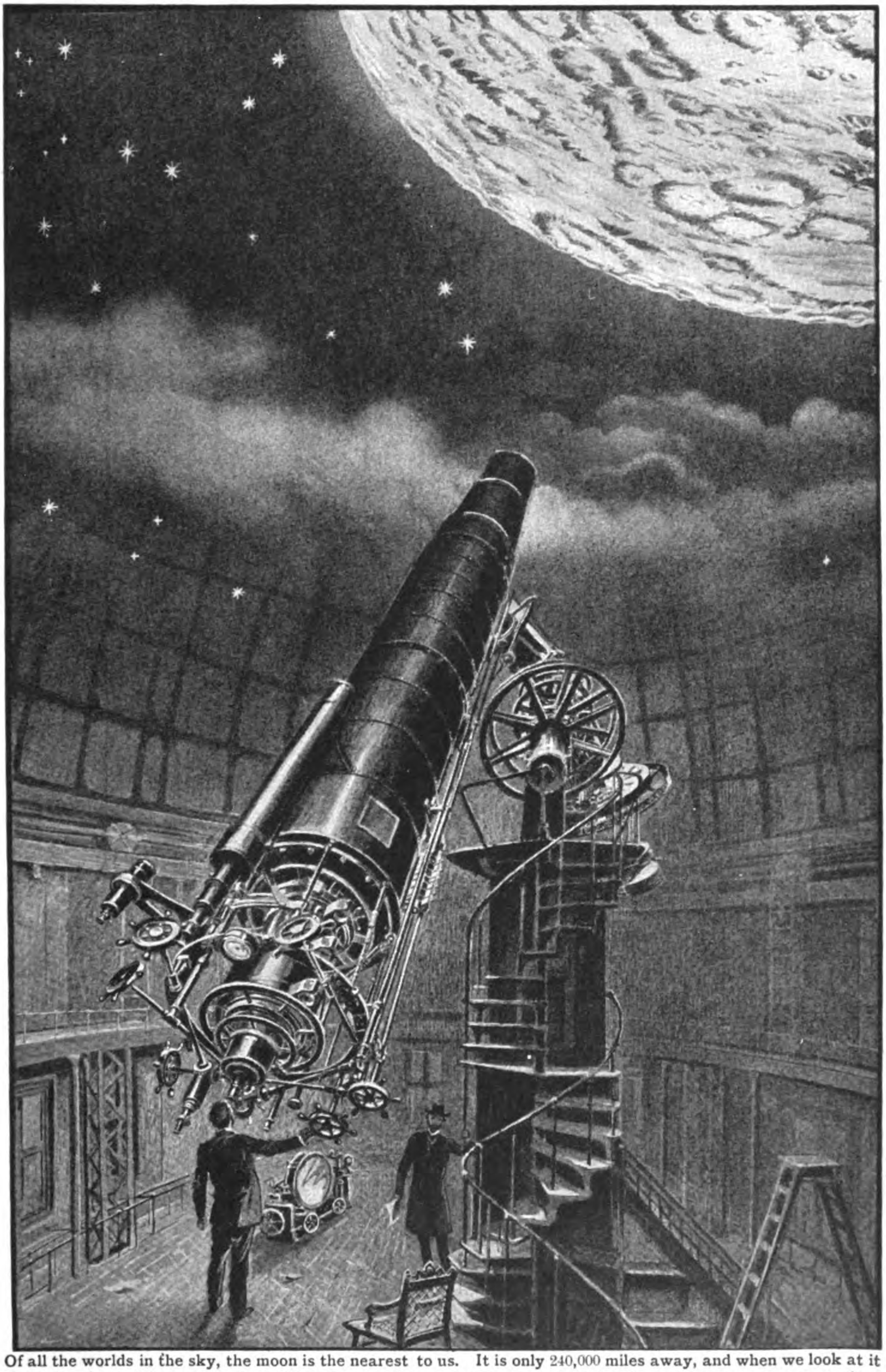
Anyone living upon the moon, then, would have day and night as we have day and night upon the earth, and for the same reason—because the moon is spinning. But, as the moon's spin is very slow, the bright part of his day would last about one of our fortnights, and the dark part of it, corresponding to our night, would last another fortnight.

A WORLD THAT WE KNOW BETTER THAN WE KNOW AFRICA

Of course, we should like to see the other side of the moon, but we may be quite sure that if we could it would be very much the same as the side we can see. We have now mapped out the visible half of the moon very carefully with drawings and photographs. As Sir Robert Ball has said, "astronomers know the surface of the moon better than geographers know the interior of Africa. Every spot on the face of the moon which is as large as an English parish has been mapped, and all the more important objects have been named." This, we must remember, however, applies only to one-half of the moon's surface. Of the other we know nothing. When we look at a map of the moon, or when we look at the moon through a telescope, we do not see at all anything like the face we all know so well, but we see at once what it was that made the appearance of a face.

The moon's surface is richly covered with markings, the largest of which are great dark spaces, which are the markings we see with our naked eyes. These spaces, though they contain no water, were called "seas" by the old

LOOKING AT ANOTHER WORLD

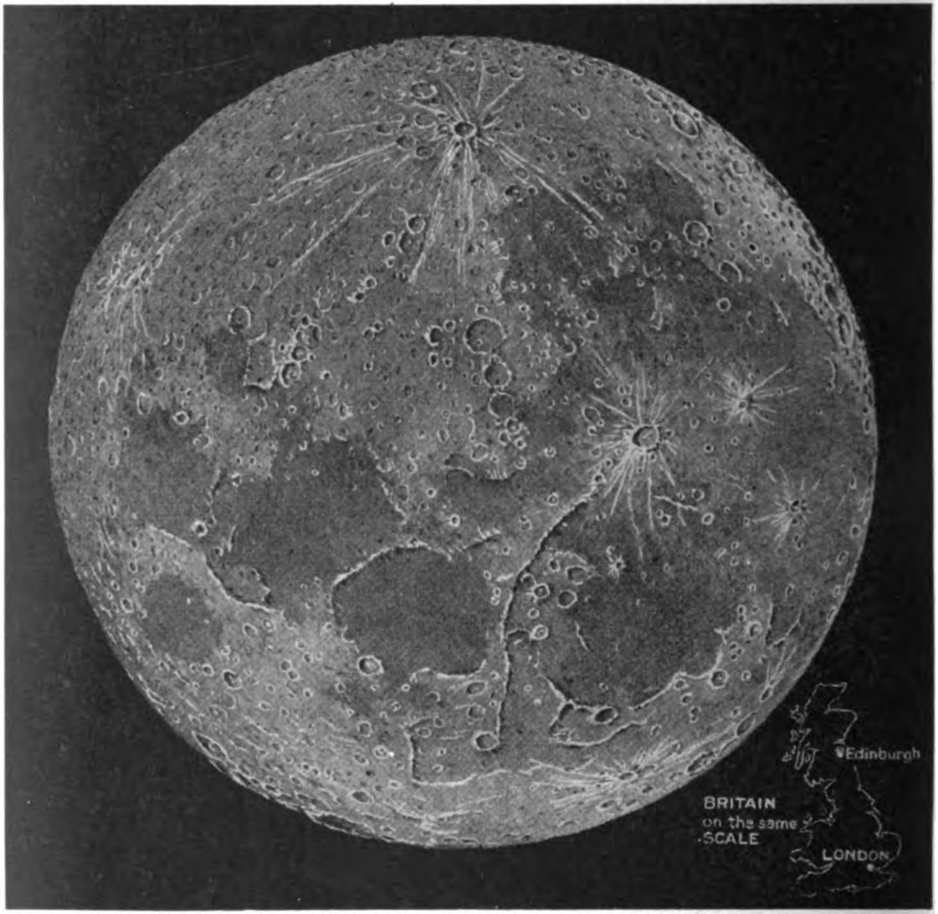


Of all the worlds in the sky, the moon is the nearest to us. It is only 240,000 miles away, and when we look at it through a huge telescope such as this, the moon seems to come down quite close and appear as near as does the small section in this picture. So large is the moon through a big telescope that we can study only a small part at a time, and we are able to make a more complete map of the moon than we can of some parts of the earth.

astronomers. We also see great ridges, which are mountain ranges, and large rings, which are the remains of volcanoes.

There can be no question that many of the things we see project from the surface of the moon, and that they are lit from something outside them, for we can see their great shadows. When the moon is quite full, and the sun is striking directly upon it, these shadows are absent, and, indeed, though the moon is then beautiful to the naked eye, the astronomer cannot learn from it nearly so much as he can at other times. If we want to see a lunar mountain at its best, we must watch it when it is not far from the edge between light and darkness. The sun's rays are then falling upon it slantwise, and we can see its form, the shadows it throws, and learn from them the size of it.

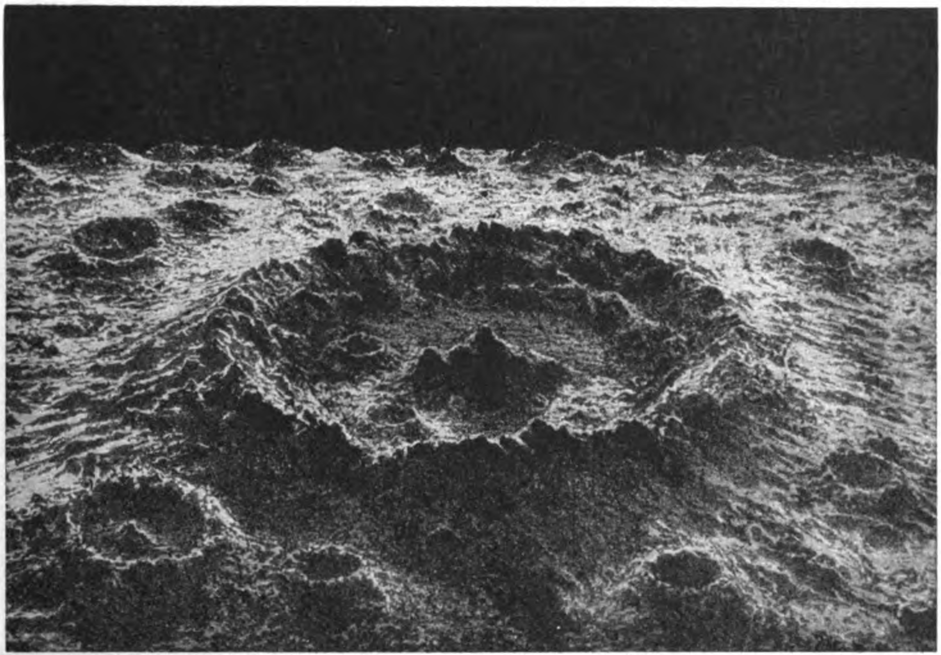
A PICTURE-MAP OF THE MOON: A DEAD WORLD LIT UP BY THE SUN



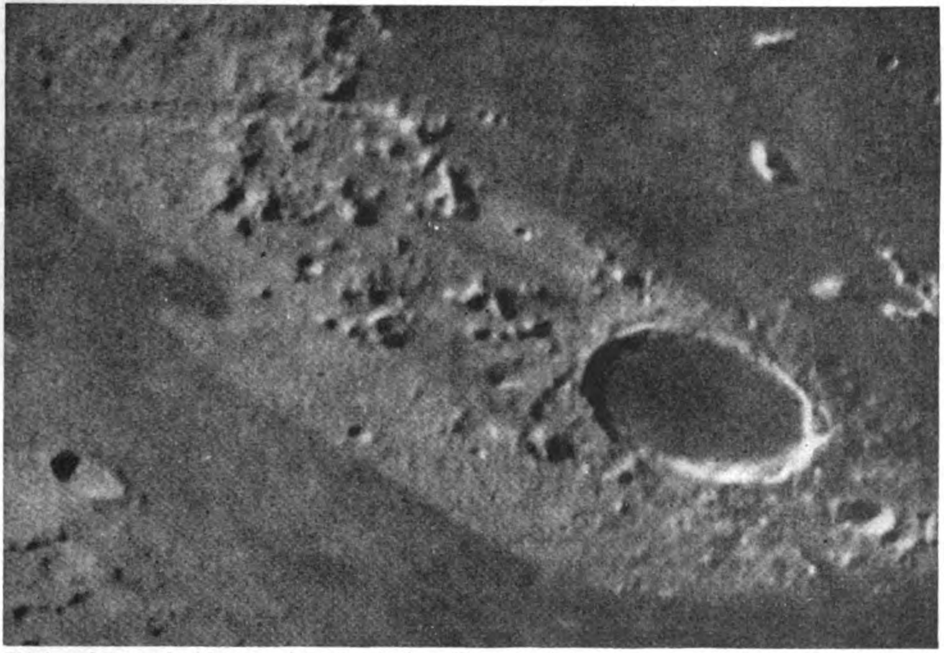
This is a picture-map of the moon, which is really a dead world, as the earth would be if there were not one living thing upon it. The moon travels round the earth as the earth travels round the sun. It is not light in itself; what we see is the light of the sun upon it, as we see the light of a candle thrown upon a wall. We see really one half of an enormous globe, like a small earth, lit up in the sunshine, spinning in space like a fireball, yet weighing millions of tons. The little map shows how much bigger than Great Britain the moon is.

The shadows thrown by the mountains of the moon are extremely brilliant and sharp. The reason is that the moon has no air. The shadows thrown on the earth are neither so black nor so sharp as they would be if there were no air, for the air spreads the light about, and throws a certain amount even upon the blackest part of the blackest shadow. Now, it is not difficult in the case of the earth to find out how high a thing is if we can measure the length of its shadow. We should do this at noonday, when the sun is highest in the sky, and then, if we

WHAT IT IS LIKE ON THE MOON



The surface of the moon is richly covered with markings, the clearest of which are those great dark spaces or plains which we can see with our naked eyes. Through a telescope, however, we can see the great mountain ranges and large craters of extinct volcanoes like those shown in this picture, which is a photograph of a model made by a great astronomer to show what the surface of the moon is like. These mountains are more lasting than those on our earth, as there is no rain or wind to wear them away in the way that they do on our earth.



This is a photograph of the part of the moon in the neighbourhood of the volcano called Plato. The dark oval is the crater of this mountain, and measures at its widest not more than fifty miles across The walls of this crater, the black shadows of which can be seen on the left of the oval, are in some parts as high as 8,000 feet. At the top of this view on the left we can see a groove or valley supposed by some to have been cut by a huge aerolite passing over the surface, and by others to have been made by an earthquake ages ago.

know how high the sun was on the day in question, we can calculate from the length of the shadow what the height of the object is. Indeed, if we make the measurement on certain days in the year, the length of the shadow is the same as the height of the thing we are measuring. It is not a very difficult matter to find out the number of miles that a shadow on the moon extends, and we can also find out how high the sun would appear to anyone looking at it from that part of the moon. So we can measure the height of mountain peaks and of crater edges in the moon. We find craters fifty, sixty, and more miles wide. Some of these have walls of the most tremendous height—10,000 feet, for instance. In other places, instead of a deep crater, we find a great plain, perhaps with a mountain peak in its centre, perhaps not. One of the most splendid of these craters is named after Copernicus, and many other astronomers have had their names given to the larger craters that scar the surface of the moon.

THINGS THAT HAPPENED BEFORE THERE WERE HUMAN BEINGS ON THE EARTH

According to many astronomers, there are still occasional traces of things going on upon the moon. For instance, we believe that a small crater has been found that was not there before. However, even if there were no doubt that small changes still occur on the surface of the moon, we are certain that nothing which now occurs there can compare for a moment with the tremendous events which created the moon's surface as we now see it. So far as we can judge, these events must have occurred not merely long before there were any human beings upon the earth to witness them, but at a time when the earth was so hot that no life of any kind upon its surface had yet become possible.

In any case, the facts of the moon s surface clearly show quite what we should expect when we remember how quickly a small body cools compared with a large one. There is one crater upon the moon which is all but eighty miles across, and the moon's craters and mountains are not to be found here and there merely, but cover it almost everywhere. Indeed, we require some other explanation of the reason why such tremendous heapings up of matter have been possible upon the moon, and that explanation is again to be found in the moon's small size.

A MAN ON THE MOON COULD JUMP ACROSS THE STREET

The force of gravitation on the moon s surface is very different from the force of gravitation on the earth's surface. It is only one-sixth as great. A man who on the earth can jump six feet high, as some can, could jump thirty-six feet high on the moon. This means that the explosive force of the volcanoes on the moon, hurling upwards all the substances which reached them from the interior of the moon, would be resisted by a feebler force of gravitation, so much less than we are familiar with on the earth that we can begin to understand how some of the great features of the moon's surface can have been formed.

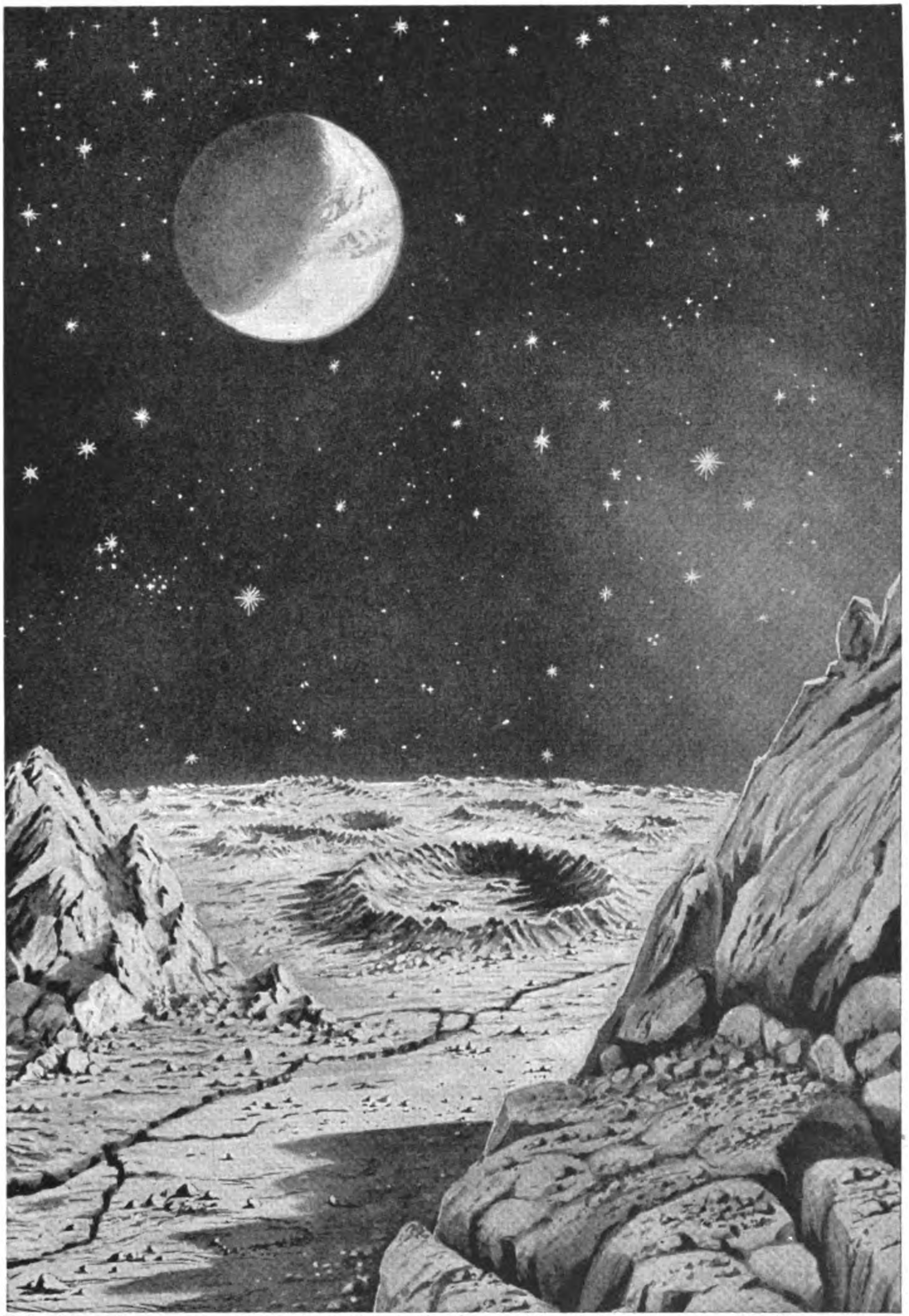
All the features of the moon's surface depend upon volcanic action and the effects of the moon's rapid shrinkage. The case is very different on the earth, where air, wind, and water account between them for a great part of what happens and has happened. Our study of the earth has already shown us how vastly important air and water are in changing its surface. In the case of the moon, there is a world without air and water. Thus, Sir Robert Ball has said:

"It seems probable that a building on the moon would remain for century after century just as it was left by the builders. There need be no glass in the windows, for there is no wind and no rain to keep out. There need not be fireplaces in the rooms, for fuel cannot burn without air. Dwellers in a lunar city would find that no dust could rise, no odours be perceived, no sounds be heard."

WHY THERE ARE NO SUCH CHANGES ON THE MOON AS ON THE EARTH

Air and water, as we know, are always smoothing away the prominences on the earth, rubbing them down and rounding their edges; but when a great mass of lava was thrown up by a volcano on the moon, and hardened as it cooled, it took a shape which ages could not change, for there was nothing to cause the change. There is only one fact about the moon which can contribute much to any changes upon

THE EARTH AS IF SEEN FROM THE MOON



This picture shows us what the earth would look like if we could see it from the moon. The light of the sun falling upon the earth must make it shine like the moon when seen, if it is seen, from other planets. We do not know if there are any inhabitants of the universe who see our earth like this, but if so they must be utterly different from ourselves. No beings dependent upon air for their life could live on the moon, for the moon is an airless world. People on the moon could not speak, because sound does not exist without air; the largest cannon-ball that could be fired, if it could be made to reach the moon, would fall like a pin upon velvet. The moon might be filled with lovely flowers, but they would give off no scent; birds might sing from every branch, but not a note would be heard. For the moon is a silent world, where sound, and speech, and smell cannot exist.

its surface now. As the moon has no blanket of air, it is very much exposed to the rays of the sun. During the moon's day, which is as long as 27 of our days, the surface must become intensely hot, but during the moon's night, which is as long as 27 of our nights, there is nothing to keep in the heat which it has received during the day, so that heat is radiated freely outwards, and the moon must become colder than any part of the earth ever is. So, the surface of the moon must shrink very much with cold and expand with heat each night and day.

WHEN THE EARTH AND THE MOON WERE ONE, AND THE DAY WAS 4 HOURS LONG

We cannot doubt that the matter making the moon was once part of the earth. The proof of this cannot be explained unless we have first made a long study of mathematics. But it has been shown, especially by Sir George Darwin, son of the great Charles Darwin, that the moon must now be getting more distant from the earth, and must have been much nearer the earth once than it is to-day. We shall see, indeed, that the moon, when close to the earth, must have travelled round at the same rate as the earth rotated on herself. The earth's day was then four hours, and the month would be the same, because, of course, the month is made by the time the moon takes to go round the earth. This means that the earth and the moon moved together as if there were a bar between them, or as if they were one body, as they must once have been. Of course, we are thinking of an earth very different from the earth of to-day—certainly an earth with a liquid surface. On such an earth tides must have been caused by the sun, as it rotated at this great speed of once round in four hours, and if a great tidal wave of liquid earth were thrown off, as a drop may be thrown from a twisting umbrella, that might account for the origin of the moon.

THE PATH OF THE MOON ROUND THE EARTH

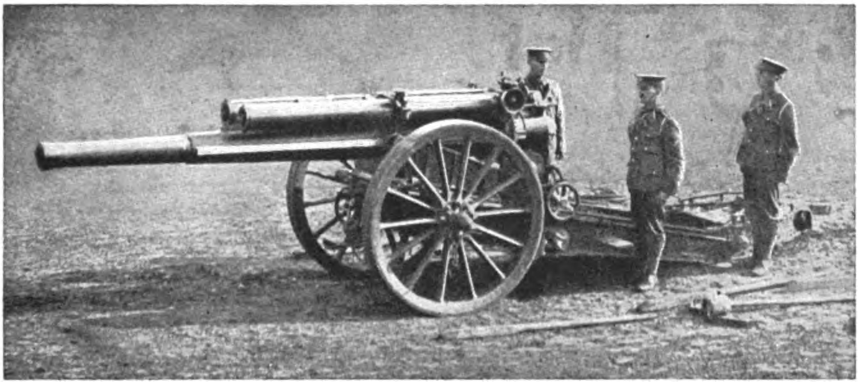
That is all we can say now about this very difficult but very interesting question. If it were true that this was the origin of the moon, we should expect to find the moon spinning upon itself and revolving round the earth, in the same direction as the earth spins round itself and revolves round the sun; and so we do. But the path of the moon round the earth is not quite on the same level, or in the same plane, as astronomers say, as the path of the earth round the sun. In a picture on a flat page—like, for instance, one of the pictures shown here—it looks as if the moon were travelling round the earth on the same level as the earth is travelling round the sun. If this were so, of course we could not see a full moon, for then the earth would be in the way of the sun's light, and instead of a full moon we should have an eclipse of the moon every month. Also the moon would eclipse the sun every month. But if we think of the moon's path round the earth as being tilted a little at an angle to the earth's path round the sun, we shall understand how it is that we are able to see a full moon, and we shall also understand that, at certain regular intervals, when the path in which the moon moves crosses the path in which the earth moves, there may be an eclipse.

WHAT THE EARTH WOULD LOOK LIKE TO A MAN IN THE MOON

If intelligent beings lived upon the moon, our earth would appear to them a most magnificent object, looking in the sky many times larger than the moon does to us, equally bright as a whole, but often hidden partly by clouds, as the moon never is. This large earth would eclipse the sun, but the size of the earth as seen from the moon would be very much larger than that of the sun, and so an eclipse of the sun by the earth, as seen from the moon, would blot out not only the body of the sun, but also its prominences and the corona, and would only leave all round a faint glow of light.

Astronomers could not learn nearly so much about the sun from the moon's surface as we can from the earth's surface, as the apparent size of the moon seen from the earth is just right for the astronomer's purpose. The relative distances of the moon and the sun vary a little at different eclipses. Sometimes the disc of the moon is a little too small to blot out the whole of the body of the sun, and then we can see a ring of sunlight all round the edge of the moon.

The next part of this is on page 2279.



WHY DOES A POP-GUN GO POP?

CONTINUED FROM 2080

The "pop" of a pop-gun is, of course, a sound, and all sounds are waves of a particular kind produced in air or in other things. If they are to be what we call sounds they must be the kind of waves that our ears are able to hear, and these are special, differing from waves of wind, because they are very short and quick.

The question, then, really is: How does the pop-gun cause the kind of air-waves that we can hear? And the answer is that air inside the gun is compressed and then suddenly released, when the gun goes off. As it is released, it naturally expands or spreads itself out again to fill the space it filled before it was compressed. This means, of course, that it gives a quick push, as it expands, to the air on all sides of it, and so it starts the wave of air, which spreads out in all directions from the point where it started, and reaches our ears. The kind of wave is one which our ears hear as a very short, sharp sound. It is short because the cause of it acts for only a very short time, and the sound of it is best represented by the word "pop."

IS THE WORD POP AN EXPLOSION?

Pop is one of the many words which were invented in imitation of sounds. We use the word "explosion" to indicate the kind of sound that is made in a case like this, when a gas suddenly expands from a smaller to a larger space, and so causes a wave in the air.

Now, if we notice what we do when we make the letters p and b, we shall find the reason why students of letters call these the explosive consonants. They are both produced by explosions, and if you say *both produced* or *biped*, you will notice that the explosion is rather less for b and rather more for p; that is all the difference between them. But the present question is whether we are strictly right in calling p and b explosives. The answer is "Yes," for in making these consonants we actually make little explosions; we do exactly the same as when we fire a pop-gun. We squeeze or compress the air in our mouths, and when we have done that we allow it to force itself through between our lips, which we began by closing. Try to say p or b with your mouth open!

Then the compressed air escapes explosively, as in the pop-gun when the cork flies out, and starts a wave in the air which we call p or b, according to the suddenness with which the air escaped. A p may be soft or a b loud, but that depends on what happens in the voice-box. The difference between the two, whether loud or soft, depends only on the suddenness of the explosion. So we learn that these consonants are called explosives not merely because they are like the sounds of little explosions, but because they *are* the sounds of little explosions.

WHAT MAKES THE LOUD NOISE WHEN A GUN IS FIRED?

This noise also is due to an explosion, the sudden expansion of a compressed gas, as it escapes into the air from the space in which it was confined. Now, in a pop-gun, or in the case of the explosion that forms the letter p, the gas that is compressed and then allowed to expand is air which already exists as air. But there is no air or any other gas in a cartridge, and the question is: Where does the gas come from that makes the noise and fires the bullet when a gun is fired—just as you may fire a drop of saliva from your mouth sometimes when you say p very forcibly?

What happens is that we suddenly burn a powder which we have prepared of materials such that when they are burnt a large quantity of gas will be produced, and it must be produced very suddenly, if the full explosive power is to be obtained. We have another great advantage in trying to make this kind of explosion, as we have not when we fire a pop-gun or say p. That is that the gases produced are exceedingly hot, for they are heated by the burning which makes them. A hot gas naturally occupies a great deal of space—far more than a cold gas, and so when we fire a gun we suddenly produce a great quantity of very hot gas in a very tiny space, which is not nearly sufficient to hold it. If this were done in a closed box it would burst the box, but in the case of the gun we have prepared a way out for it—only that we put a bullet in the way. Out comes the gas, driving the bullet before it, and as it expands it starts the wave of sound we hear.

WHAT IS GUNPOWDER MADE OF?

Modern gunpowders are very different in many ways from the old gunpowder that was used for so many years without any change. Nowadays we make smokeless powders and all sorts of "high explosives," as they are called, which are very different in composition from ordinary gunpowder. But in all cases the principle is the same. It would not do to admit air to the powder, because we should require a channel for the air, and the explosion would occur through that channel. Also, air is only one-fifth oxygen, and the nitrogen would be of no use. We must have our oxygen *in* the powder. That is done by using such a thing as saltpetre or nitre, which has a great deal of oxygen in it. Just as chalk has oxygen in it, so has nitre, and it has the advantage that it very readily gives off its oxygen to anything that will take it.

Also when nitre is decomposed the nitrogen in it gets free, and this nitrogen, besides requiring room for itself in any case, is made very hot by the burning that has occurred, and so requires much more room than it would if it were cool. Next, we must have something to burn, and that is supplied by charcoal, which is carbon, and by sulphur or "brimstone." These take the oxygen from the nitre very quickly, especially as the oxygen given off from one of its compounds is specially active in combining with other things, as we have seen in another part of this book.

Thus the gases which cause the explosion when they expand are carbonic acid, sulphur dioxide, and nitrogen, together with small quantities of other gases, while the potassium, of the nitre is left, combined with other things, and forms what must be cleaned out often if the gun is to work well. The invention of this mixture—carbon, sulphur, and nitre, called gunpowder, was a great event in the history of war, which it completely changed.

WHAT IS SMOKE MADE OF?

There are many different kinds of smoke. The gases that are produced when a gun is fired are not smoke, for smoke is never a gas, but a mixture of finely divided *solid* matter suspended in air. In the case of ordinary gunpowder we get least smoke when the proportions of the various things in the gunpowder are nicely balanced. If there is too much of anything in proportion to the others it will not be used up, but will be driven out as smoke; and in any case there is some smoke with ordinary gunpowder, which is by no means the best mixture that can be obtained for the purpose.

The smoke of towns is mainly made of particles of carbon, but a special objection to it is that it is oily, and so sticks to things and catches dirt. The exact composition of smoke depends, of course, on what is burnt, and on how it is burnt. The smoke from a wood fire is very different from that of a coal fire; and in either case the amount and the composition of the smoke largely depend on the temperature of the fire.

The hotter the fire the better and more complete will be the burning or combustion of the fuel. We have all noticed how, when a fire has just been lit, and so is not yet very hot, dense clouds of smoke arise from it; but when the fire is well going, and burns hot and clearly, it produces very little smoke. Also, much less smoke is formed from certain kinds of coal than from others, and much depends on the supply of air to the fire. All these points are very important on account of economy of fuel, the heat produced by the fire, and the injury which smoke in the air does to human beings as well as to all animals and plants that have to breathe it.

WHICH IS THE MOTHER—THE HEN THAT LAYS THE EGG, OR THE HEN THAT HATCHES IT?

You might almost as well ask which is the mother, the woman who gave birth to the baby, or the fire that keeps it warm, or the cow that gives it milk when its mother cannot? And yet the question is well worth asking and answering, for there are two parts to being a complete mother. One is bodily, or physical, and is, of course, the *real* motherhood. It is the real motherhood, for the chick that develops from the egg really gets its life from the hen that laid the egg, as does the baby from its real mother. Both egg and baby require more "mothering" of a kind, and that is why we may say that *complete* motherhood has two parts; but we see which part is more important, when we remember that it is quite easy to hatch a hen's egg by putting it in a box that is kept warm. This is called an incubator, and so your question might almost run: Which is the mother, the hen that lays the egg, or the warm box that hatches it?

Among human beings the second part of motherhood, though not the real and bodily part, is more important than among any other creatures; for babies are more helpless, and are longer helpless, than any other young creatures, and so need more care. So we must say that though the real mother is she who gave birth to the baby, yet we can call her a complete mother only if she cares for the baby after it is born; just as the hen who lays the egg and then takes care of it, and of the chick afterwards, is a more complete mother than the hen which only lays the egg and then does nothing more for the young and needy life that is within it.

IS THE EARTH HOLLOW INSIDE?

Though no one has ever seen, or ever can see, the inside of the earth, we are perfectly certain that the answer to this question is "No." We know that the earth has a solid crust, very thin, and very apt to crack and "buckle," producing such things as mountain chains in consequence, and we can prove that this crust must be utterly different from what lies underneath it. Now, one of the many ways in which we can learn about the inside of the earth is by weighing the earth, and noting its weight in comparison with its size. This teaches us what the density or denseness is of the stuff that makes the earth, and the result is a conclusive answer to the question.

If you had given you a small ball which weighed tremendously heavy—far heavier in proportion to its size than any ball you play with—you would not suspect it of being hollow, but rather you would wonder how it came to be so tightly packed and squeezed together. That is the case with the ball we call the earth. Its denseness is very high indeed, and the material in it is packed and squeezed together with more tightness than we can imagine. We have just scratched the surface of the earth, we human beings, and already, in going down even such a tiny distance, we find the density increasing, as it must, if we think of the weight that lies over us at the bottom of a mine. Certainly, then, the earth is not hollow inside, but really the very opposite of hollow!

ARE OUR BODIES HOLLOW INSIDE?

The answer to this question really goes with the answer to the last, and, for the same reason as in the last case, the answer is "No." The pressure to which the inside of the earth is subjected prevents it from being hollow, and the pressure to which the inside of the body is subjected prevents it from being hollow. We know that there are tubes in the body, and bags, such as the stomach; and everyone is apt to think of the stomach before a meal, when we say we feel "empty," as if it were a bag with a hollow space inside it.

But it is never anything of the sort. The whole body is subjected to the pressure of the atmosphere, squeezing it on all sides, and the consequence is that when the stomach, for instance, is empty, its walls are always squeezed firmly against one another by everything that is in their neighbourhood. The whole body and all the organs in it, whether solid or hollow, are packed tightly together, with never a chink or a gap or an empty place anywhere. It used to be said long ago that "Nature abhors a vacuum"—*vacuum* is Latin for an empty place—and this means that there are really no empty places anywhere, for Nature always fills from without any space or place that we try to make empty. This applies to the earth or the air or the sea or our own bodies; and even when we make what we call a vacuum by scientific means, it is really crammed full with the ether, which is absolutely everywhere, even in what we call empty space.

WHAT KEEPS TRAINS ON A TOPSY-TURVY RAILWAY WHEN UPSIDE DOWN?

Of course, the puzzle is that when the train is upside down there seems to be nothing to act against the force of the earth's attraction, which is always pulling on it. Now, the train does not fall, and we are certain that gravitation is always acting, and *must* pull the train straight back to the earth if nothing acts against it. There, therefore, must be some other force acting which is powerful enough to act against gravitation so as to keep the train on the rails.

Exactly the same thing is seen when we swing a pitcherful of water round on a chain, without spilling the water. What keeps the train on the rails, or the water in the pitcher? Now, we know that if the train stopped moving when it was upside down, or if the pitcher was similarly stopped, train or water would fall. Therefore the force we are looking for, that balances the force of gravitation, must be somehow *in the motion* of the train or the water.

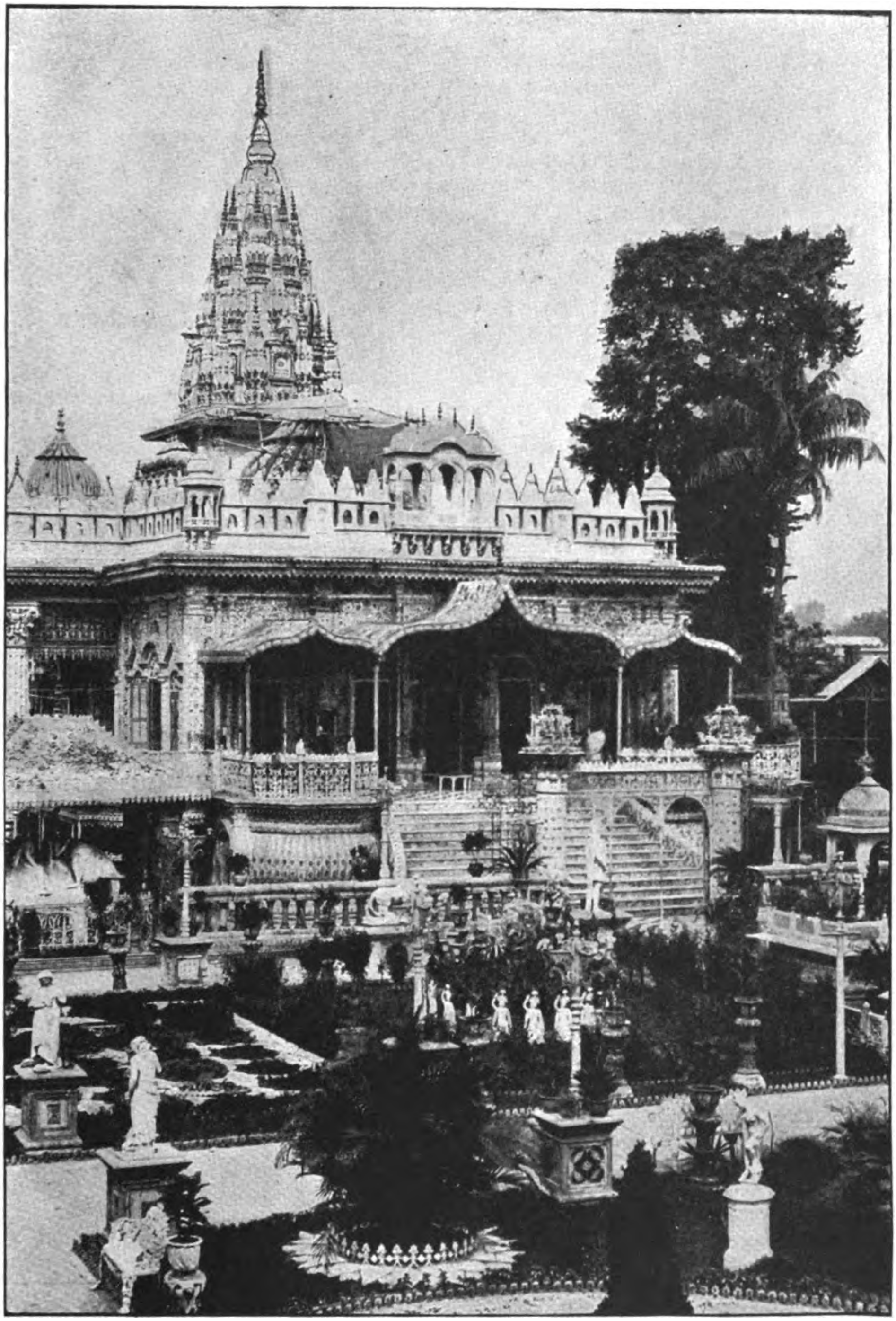
And so it is. Anything in motion has force in it, as we know when someone bumps up against us. Now, this force acts in the line in which the thing is moving. But when a thing moves round and round, this force is still working in a straight line, so that the thing always tends to fly away from the circle in which it moves. This force has the rather hard name of *centrifugal* force, which means the force that flies away from the centre of the path in which the thing moves. It is this centrifugal force, produced by its motion, that always presses the train against the rails in any part of its course, or the water against the pitcher. It is this force also that keeps the earth from falling into the sun; and if train, or water, or earth were stopped in its course, or did not go round quickly enough, each would certainly fall—to the ground in the first two cases, and to the sun in the last case, and all for the same reason. These great laws act in big and little things alike: "The law that moulds a planet rounds a tear."

WHY DO HOUSES SEEM CROOKED WHEN WE LOOK ABOVE A STREET FIRE?

Light is always bent in some degree by the various things through which it passes—as when it passes through the air to our eyes from a star, or as when a stick, half in water, seems to be bent. Now, so far as light is concerned, the air is different according to its warmth. Warm air is less dense than cold air, and when light passes from one to the other, in either direction, its path is more or less bent. So when we look at the houses through the hot gases that rise from a watch-fire, the light, as it travels from the houses to our eyes, is bent in passing from the cold air through the hot gases, and is bent a second time in passing from the hot gases through the cold air again.

Also, as the fire does not give off the same quantity of gas at every moment, the light is bent in different ways, and not only do we see the houses crooked, but they seem more or less crooked as we keep on looking at them. This bending, or breaking, of the rays of light as they pass from one thing to another is called *refraction*, which simply means breaking, and is very important in every way. Just as you see the houses crooked when you look at them through the gases from a fire, so we see all the stars crooked when we look at them through the air. The

A TEMPLE LIKE A JEWEL-BOX



India has the most beautiful buildings in the world, and this picture of the Jain temple at Calcutta helps us to realise something of the great wonder of this ancient empire. The temple is built chiefly of white marble, and every square foot of the surface is decorated as if it were a jewel-box. The posts of the gateway, the wall-spaces, and the front are covered with mosaic made of millions of square pieces of marble and glass; and this glass reflects the light, so that when the sun is shining upon it the temple seems to be covered with diamonds.

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light from the stars is bent as it passes through the air, and so we do not see stars where they really are, but always a little distance from the real place, because of the *refraction* of their light.

WHAT IS IT THAT CAUSES AN EARTHQUAKE?

The first reason that probably accounts for all earthquakes is simply that the earth is shrinking as it gradually loses the heat from its surface. We know that the earth has a very thin crust, which is comparatively cool, and a very hot inside. The crust rests upon the inside of the earth, and as the inside shrinks it is bound to leave parts of the crust unsupported, so that they are apt to sink or crack. This will happen especially where the crust of the earth is thinner and more liable to crack than in other places. It is very common in Japan, for instance, and very rare in England.

But when an earthquake happens at any part of the earth, it starts a wave of disturbance that travels right over the earth, and can be detected anywhere if we look out for it. Then, if we notice the time when the wave reached a place, and find out what the time was when it started, we can learn how quickly the earth-wave travels. But sometimes no one knows where the wave started, and then, very often, we can guess that it started under the sea; for earthquakes may start in the earth's crust where it forms the beds of great oceans as well as anywhere else. And so there may ever be earthquakes at the bottom of the sea,

WHY DO WE SHIVER WHEN WE ARE VERY COLD?

There are more good reasons than one why we shiver when we are cold. The machinery of it, as we may say, is that cold, *at first*, rather excites and disturbs the nervous system, just as heat usually soothes it. We notice these contrary effects of heat and cold in the case of a warm bath and a cold dip. This, of course, is not to say that shivering is at all the same thing as the feeling of activity we have after a cold dip; but in each case the cold has been what is called a stimulant. But now we have to ask whether the shivering is of any use to us, or whether it is a wholly useless and purposeless thing; beyond any doubt it is possible to show that shivering serves the purposes of the body just as hunger does, and just as even fever often does, though we think of these as things rather bad in themselves. One good reason for shivering is that it makes us aware of cold as we might not otherwise be, and so we can protect ourselves. After the first stage of its action great cold sends the brain to sleep. Shivering perhaps serves to keep the brain awake and make it aware that something must be done.

DOES SHIVERING FROM COLD HELP TO MAKE US WARM?

I think that a very good reason for shivering can be found. Whenever a muscle works, heat is produced; indeed, a very great part of the heat of the body is made in the muscles, which have been called "the fireplaces of the body." Shivering consists of small, quick, to-and-fro movements, sometimes almost quite regular, as when our "teeth chatter," of most or all of the muscles of the body. Now, though shivering often makes us aware that we are cold, yet it really helps to keep us warm, for all these little muscular movements are producing heat. So we may say that when a person, by keeping still, refuses to work his muscles so as to keep warm, the brain takes the matter into its own hands and does what little it can, in spite of him, by setting his muscles shivering.

WHY DOES EVERYTHING SPIN ROUND WHEN WE ARE DIZZY?

When anyone feels dizzy, and perhaps almost about to faint, his brain cannot properly control the working of his eyes. They may move round from side to side, perhaps independently instead of together, and so it may look as if things were spinning round. Another reason for dizziness has to do with a wonderful part of the body near the ear, and without which none of us could sit upright, much less stand, though few people have ever heard of it. This organ, which used to be thought to have something to do with hearing, really controls our balance. In some people it suffers from a disease, and these people constantly suffer from dizziness and a feeling that everything is spinning round and round.

As every child knows, we can make ourselves dizzy, and can think that everything is spinning round, by turning round ourselves several times in one direction. This disturbs the organ of balancing, about which we have been speaking, and this disturbance it is that gives us the feeling. If you turn round the other way you put things right, by restoring the original state of affairs within the balancing organ. The name for the feeling that things are spinning round is *vertigo*; and *vert* simply means *turn*, as in such words as convert, invert, and others.

WHY IS IT THAT FLAMES NEVER GO DOWN, BUT UP?

We might think, if we had not noticed, that this question was not true, and that flames only go upwards because a gas-jet, for instance, is always directed upwards. But the question is quite true, even in the case of a gas-jet that is directed downwards, for we find that then the flame turns upwards. If we *must* have a flame going downwards or sideways, then we must have a draught to blow it, just as the wind will blow the flame of a match in any direction. This can be done in certain burners by turning the hole where the gas comes in the direction we want, and by making the gas come out very fast. Also, in the case of a fire, there is a considerable draught of air up the chimney, helping to blow the flames up with it.

But even where there is no draught at all in any direction, and when we burn something without sending any gas in any particular direction through a hole, flames always go up, and never down, as the question says. And the reasons are: First, that the gases made in the flame are very hot, and, as hot gases are always much lighter than the cold gases that make up the air around them, the hot gases of the flame tend to rise; and secondly, every flame, as the hot gases go upwards because they are so light, *makes a draught for itself*. As the hot gases go up, the space they leave is filled from below, and this goes steadily on, and so makes a draught.

IS THERE ANY USE IN THE WAY HOT GASES RISE?

A gas-jet, properly used, may actually help to ventilate a room by making a draught; and every fire does the same thing, by increasing the natural draught going up the chimney. If hot gases did not rise, I do not see how we should live, nor how anything—a fire, or a gas-jet, or anything else—could go on burning for more than a second or two. The gases which are produced when anything burns are themselves burnt, once and for all; they can neither be burnt again, nor can they help to burn anything else. Their life and power, we may say, is ended for ever.

These gases consist chiefly of carbonic acid gas and water-vapour. They are both of them completely oxidised—the carbon of the one and the hydrogen of the other are combined with all the oxygen they can hold. Nor will either of them give up its oxygen for the burning of anything else. Thus, if hot gases did not rise, and so make room for fresh air—which really means fresh oxygen—nothing could burn for long; for nothing can burn in an atmosphere of carbonic acid and water-vapour, and such an atmosphere would at once surround every burning thing if hot gases did not rise.

WHY DOES OUR BREATH RISE IN THE AIR?

Exactly the same is true of breathing as of hot gases, as explained in the last question. If the carbonic acid and water-vapour that leave our lungs hung round the nose and mouth, we should have to breathe them in again at the next breath instead of breathing in fresh air, and so we should certainly be suffocated.

Instead of that, they obey the law of hot gases, and rise out of the way at once, so that when we breathe in again there is fresh oxygen ready for us to use. Of course, we can defeat Nature, if we are so foolish, by cooping ourselves up in close rooms, perhaps with very low ceilings, so that the gases we breathe out can scarcely get away at all from the neighbourhood of our noses, and so we breathe breathed—that is, already burnt—air; and this is one reason why people get sleepy, and even faint, in badly-ventilated places.

We can also defeat Nature—at any rate, to some extent—by other means. For instance, we can put the bed next a wall, which hinders the gases of breathed air from getting freely away. Beds should, if possible, be away from a wall. If not, they should be placed so that the wall is not on the side that the sleeper usually sleeps on.

And the question about the bed-clothes suggests a way in which we can interfere with our breathing—a way which children especially are rather fond of, as sometimes they feel safer in bed in the dark if their ears are covered.

IS IT GOOD TO SLEEP WITH THE BED-CLOTHES OVER THE FACE?

Mothers and nurses sometimes get anxious about this, for they think—and quite rightly, too—that a child, or anyone else, should have its nose free when it is asleep, and not covered with the bed-clothes. But if they will watch a sleeping child, they will see that though often the child starts to go to sleep by covering its face up, yet *always*, when it is asleep or nearly asleep, the child's body will do the rest for itself, and the head will be moved until the nose gets free of the clothes, so that fresh air can get to it, and so that the breathed gases can freely rise and get out of the way. So people who look after children really need not worry if children like to start the night with the bed-clothes almost over their faces. The child's brain, so soon as the child's self is asleep and cannot interfere with it in any way, will put things right.

It may be, too, that we get to sleep more easily by having the nose and mouth rather covered at first. The way in which birds and other animals go to sleep suggests this, and we can understand it at once if we remember that carbonic acid always makes people rather sleepy, as we all notice in badly-ventilated places, such as churches and halls and crowded rooms, and almost anywhere except the open air, or a room with open windows.

HOW DO WE KNOW THE NAMES OF OTHER PLANETS?

This is what a boy would call a "jolly" question, said the Wise Man, and I should like to go for a picnic with the boy or girl who asked it. The name of everything is something that men have given it, or else that children have given, like the names "mamma" and "dadda," which babies invented. So when we talk about *knowing* the name of anything, we really mean only knowing what some other people have chosen to call it. The name is not a natural part of the thing; the name does not matter so long as other people know what we are talking about. "A rose by any other name would smell as sweet," said Shakespeare. And the sun by any other name would shine as bright and, of course, would still be just as much the sun as ever. Indeed, before we talk about the planets, what about the name of the sun itself? We call that great bright thing "Sun," but the Romans called it Sol, and the Greeks called it Helios. If there are people on Mars they may call the sun "cat," and if they have cats they may call them "suns," for all we know, and for all it would really matter. A name is just a label.

HOW DID THE PLANETS GET THEIR NAMES?

The names of most of the planets are very old indeed, and they were given to them for interesting reasons worth knowing. Mercury moves very quickly, it has to, for it is so near the sun that it would be drawn in unless it moved quickly, and its name—Mercury—is after the "messenger of the gods," whom the Greeks and Romans invented and believed in. Then Venus is very beautiful and gets its name from Venus, the supposed goddess of beauty. Mars is reddish and so suggests blood, and was therefore called Mars, after the god of war. Jupiter is the biggest of the planets, and is called after Jupiter or Jove, the greatest of the gods whom people believed in long ago.

Then, to take one more instance of the way in which the planets are named, there is Uranus, now so named, like the others, after an ancient god. It was discovered by a great German, William Herschell, who lived in England, and he wanted to call it Georgium, after the King of England. Others wanted to call it Herschell, after the discoverer, which would certainly have been wiser than to name it after a king who had nothing at all to do with it; but finally it was agreed to give it an old name like the others.

As for Earth, the good mother of us all, the ancients called her *Ge*, and so now we call the study of the earth *ge*-ology; while what we call the moon they called Luna. Hence, we have the word lunatic, because in ignorant times it was thought that when a man's mind went out of order, it was through the influence of the moon.

WHO GAVE THE STARS THEIR NAMES?

Nowadays we know an enormous number of stars—about 100,000,000—and the smaller ones (or rather the fainter ones, for they may only seem small because they are distant) simply get numbers or letters, for all the world like motor-cars, in order to identify them. But the brightest stars have been known for many ages, certainly not less than 10,000 years, and the origin of their names is lost, like the names of the men who named them.

Some of these names we call Latin and Greek and Arabic, but certainly many of them are far older than the Romans or the Greeks or the Arabian astronomers, and they got the names from those who went before them, just as we have got the names from them. A star with a specially interesting name is the Pole Star, shown on another page, giving us the direction of the north. No one can say how many millions and millions of sailors' eyes, throughout thousands of past years, have been gratefully and often anxiously fixed upon that star, by which they could steer their way home across the pathless sea. But for all those sailors that star has doubtless been known by whatever word stood for north, in whatever language the sailors spoke. The names of great stars like Aldebaran and Sirius must be older than any human record. *Al* is simply Arabic for *the*, and many of our words and names beginning with al are of Arabic origin.

DO PEOPLE RISE FROM THE WATER THREE TIMES BEFORE THEY DROWN?

The answer to this question is "No," and the old story that drowning men rise three times is entirely erroneous.

Sometimes people who drown do not rise at all—as, for instance, sometimes when they strike their heads against something hard at the bottom. Usually they do rise, for our bodies are only very slightly heavier than water, and the movements of arms and legs, even of a person who is not a swimmer, will raise his body to the surface until he takes in so much water into his stomach and lungs that his body gets heavier and can rise no more. It is entirely a matter of chance how often, if at all, a drowning person rises. During a diving competition at the Franco-British Exhibition in London, in 1908, a diver hit the water flat so that he was "winded." He simply lay at the bottom, for he was unconscious and could make no movements. If everyone had waited for him to come up even once, he would have been drowned, but a swimmer dived in and brought him up, and he was soon all right. Here is a case which shows us that it is never, *never* safe to believe in lies of any kind, however old or popular or pleasant they may be. When anyone is in danger of drowning we must know that it is our duty to act at once, and so we may succeed in saving a human life.

IS EVERY SEVENTH WAVE A BIGGER ONE?

Another superstition we may add to this is one which says that every seventh or every ninth wave, when the tide comes in, is bigger than the others. It is untrue and without any basis of truth. Most of these assertions about three and seven are nonsense, and are derived from long ago, when those numbers were thought to have some special value in Nature.

WHY IS THE STEAM THAT COMES FROM HOT YELLOW WATER NOT YELLOW?

This is a question that goes with those about rain, for the answer to it is the same as the answer to another question—really the same—which might have been asked: Why is rain made from salt water not salt? The answer is that when water turns into a gas or vapour—when it *evaporates*, as we say—it always leaves behind it anything that may have been dissolved in it.

In the case of the rain, the sun makes the water evaporate, but leaves behind the salt that was dissolved in it. In the case of the hot yellow water, the yellow stuff is left behind as the water turns to steam. This rule about water is of the greatest importance in Nature, for it means that, by evaporation, we are always getting fresh supplies of pure water that has nothing dissolved in it, and is therefore able to dissolve new things. We know that much of the work water does in the world is done by its dissolving things, but there is a limit to the amount of anything that even water can dissolve, as you can prove for yourself with a little water and a lot of salt or sugar. If water did not always tend to evaporate and leave the dissolved things behind it, its work of ever dissolving new things would soon come to an end. And chemists would not know how to get pure water, except by the very long and costly method of actually making it by burning hydrogen with oxygen.

WHY DOES COLOURED SOAP MAKE WHITE SOAP-SUDS?

I rather think that this question is not quite true. The first thing to find out is, what are the soap-suds, or lather, made of, and the answer is that, like foam, they are mainly made of bubbles of water. Only the soap makes the water more sticky, so to say, and thus we get bubbles which hold together, and last a long time. If the soap is yellow before it is melted, it is still yellow even when it is melted, and often you will find that the lather of a deeply-coloured soap has a *faint* colour of the same kind. The real question is, Why is the lather so faintly coloured, so *nearly* white? Directly we study soap-bubbles in general, we find the answer to this question. The film of water (and soap) that makes a soap-bubble is extremely thin; indeed, it is one of the thinnest things in the whole world. Now, since it is so thin, the amount of soap and colouring matter in its wall is very small, and that is why its colour shows so little. A single "red" blood-cell is only a faint yellow in colour, but when we see millions of them together they look bright red. So with other things. When light passes through a very thin layer of any coloured thing, or when light is reflected from a very thin layer of such a thing, the colour is only slight, and faint. The white light is only just a little changed.

HOW DOES SOAP TAKE THE DIRT OUT OF THINGS?

The answer to this question has been a great deal argued by chemists, and of course it is a very important thing, for cleanliness is very necessary, and enormous quantities of soap have to be used, and it is well that we should know how soap does its work, so that we can make the soap that works best.

Now, it is fat or oil that especially makes things dirty—everyone knows how oil catches dust and makes a mess on one's hands and clothes. It is the oil that comes out of the skin, especially out of the head, where the hair is, that makes us so quickly dirty; and the same applies to other things. Now, if only we can melt or get rid of the oil on things, we soon make them clean, and the real use of soap is that, somehow, it disposes of oil. It does this, we now know, in at least two ways. Most soaps have in them a great deal of something we call alkali. This alkali simply dissolves the oil that gathers on things, and so it makes them clean. But soap takes the dirt from things in another way, as we know when we use soaps that have no alkali in them at all. It has the power of breaking up oil into a number of very tiny little drops, which are easily washed away, together with all the dirt that the oil has caught and collected.

A collection of very tiny drops of oil, held in some other fluid, is called an *emulsion*. Water alone will not form an emulsion of any oil, because oil and water will not mix. That is the reason why we cannot wash well with water alone. But when water has soap dissolved or melted in it, it is able to make an emulsion of the oil on anything we are washing, and so makes it clean.

WHY DOES AMMONIA CLEAN THINGS?

Ammonia is really a gas, but, like other gases, it can be dissolved in water, and it is more *soluble*, as we say, in water than almost any other gas. The solution of ammonia gas in water is what we usually call ammonia, and it is very largely used for cleaning things. Indeed, many people add what is called, not quite correctly, "liquid ammonia" to the water of their bath, for they find that it helps to make them very clean. "Liquid ammonia" is not a correct name, because what we call that is really water containing a lot of ammonia gas dissolved in it, as we have already seen.

Ammonia cleans many things far better than even strong soft soap, but it is so powerful that we cannot use it for everything. The reason why ammonia is such a splendid cleanser is, first, that it is an alkali, and so dissolves fats and oils, as we have seen that the alkalies in ordinary soap do. But ammonia is different from all other alkalies, because it is really a gas, and the great fact about a gas is that, if it gets "half a chance," it goes everywhere. Ammonia is thus the most searching of cleansers; not a speck of oily dirt, however well hidden, can escape it.

The next Questions begin on page 2327.

A STICK OF CHOCOLATE

CONTINUED FROM 2112

She came out of the shop with the end of the stick in her lips.

"What are you eating?" someone asked her.

"Chocolate," she said; and a little brown rivulet trickled from her lips to her chin.

"What is chocolate?"

She thought for a moment, and then answered with great positiveness:

"Something good to eat."

Someone took her hand, the hand that was not brown with chocolate, and walked away with her across the village square to the salt marshes beside the sea.

"Once upon a time," he said, "there was a man named Christopher Columbus, who discovered a great continent called America, and discovered in this great continent a little tree called the cacao-tree. There was something very strange about this tree: it grew buds, fruit, and flowers all the year round, and all at the same time. The Indians who inhabited America gathered the pods of this tree, split them open, took out the beans which they contained, dried them in the sun, and nibbled them just as you are now nibbling your penny stick of chocolate. Columbus went back to Spain with some of these beans in his pocket. Many years after, on June 16, 1657, a day which every boy and girl ought to observe as a sacred feast, there appeared this notice in an English newspaper called the 'Public Advertiser':

"In Bishopsgate Street,
in Queen's Head Alley,
at a Frenchman's house,
is an excellent West Indian drink called
Chocolate, to be sold,
where you may have it ready at any time,
and also unmade,
at reasonable rates.

"Fifty years after chocolate was the fashionable beverage of England, and restaurants began to appear in every town with the name, which you may still see, The Cocoa Tree. Aristocratic England drank the great drink of poor ignorant Indians. And now, in 1908, all over the world boys and girls are going into sweet-shops with pennies, and cents, and sous, and pfennigs in their hands, and coming out with the poor Indians' chocolate in their mouths.

"Now, if anyone asked you who was the greatest man that ever lived, would not your chocolate-stained lips hurry to exclaim, Christopher Columbus?

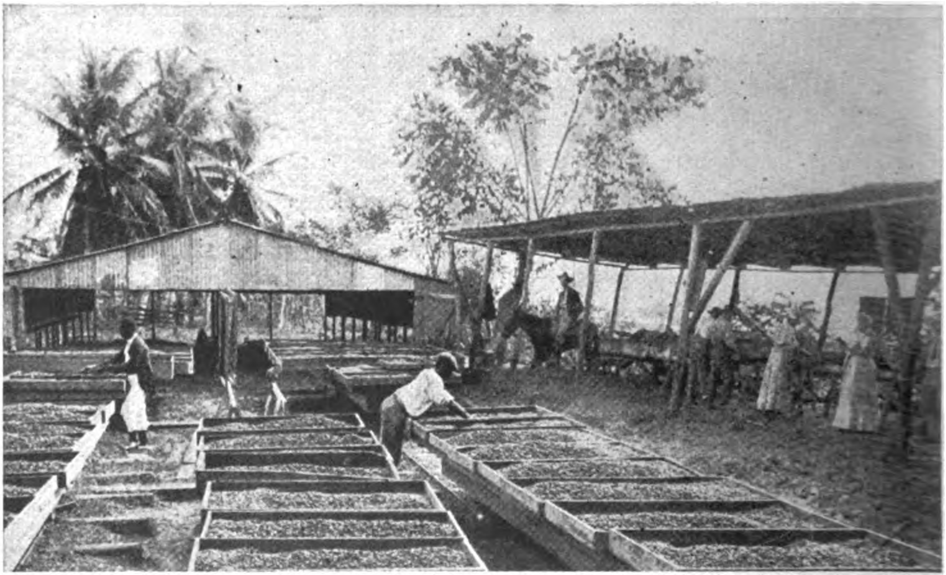
"And when you taste your penny chocolate, you should think of how that beautiful brown fluid on your American tongue was once a little bean tucked in a comfortable pod growing on a little tree thousands of miles across the sea; and of how a negro, singing a coon song, came with a long pole, which had a kind of scissors at the end, and nipped off the pod, and left it on the warm earth for a day; and of how another negro, in a straw hat and striped linen trousers, came and split that pod, and took out the very bean you are chewing, put it in a basket and carried it away, singing about his picaninnies, to lie in a trench till it was fit to pack in a box, and go aboard a mighty steamer, and make the long journey to be roasted in the factory. If you had gone to buy that bean where it grew, instead of waiting for a ship to bring it to you, it would have cost you not a penny, but about $250.

She looked up and smiled.

"I've got nearly fifteen dollars in the savings bank!" she said proudly.

"My dear, you are a very important person. Your penny employs thousands of negroes, ship-builders, railway engineers, box-makers, sailors, porters, and factory hands. If children stopped eating chocolate there might be a panic on the Stock Exchange, the Paris Bourse, and the Dutch money market. But there are others besides you. The Prime Minister of England, the President of the United States, Field-Marshal Lord Roberts, Admiral Sir John Fisher, Mr. Roosevelt, nay, King George the Fifth, Emperor of India and the Britains Beyond the Seas—once upon a time they walked into sweet-shops and spent their pennies on sticks of chocolate. Bullseyes have their charm, almond rock is delicious, there is no question that toffee at certain seasons of the year is superb; but chocolate is universal and eternal. Every old gentleman in the world at some time has eaten chocolate. Perhaps that very stick that you have now quite eaten grew on a tree which sent chocolate to Queen Victoria in Windsor Castle, or perhaps the fruit of the same tree has travelled into every country across the sea."

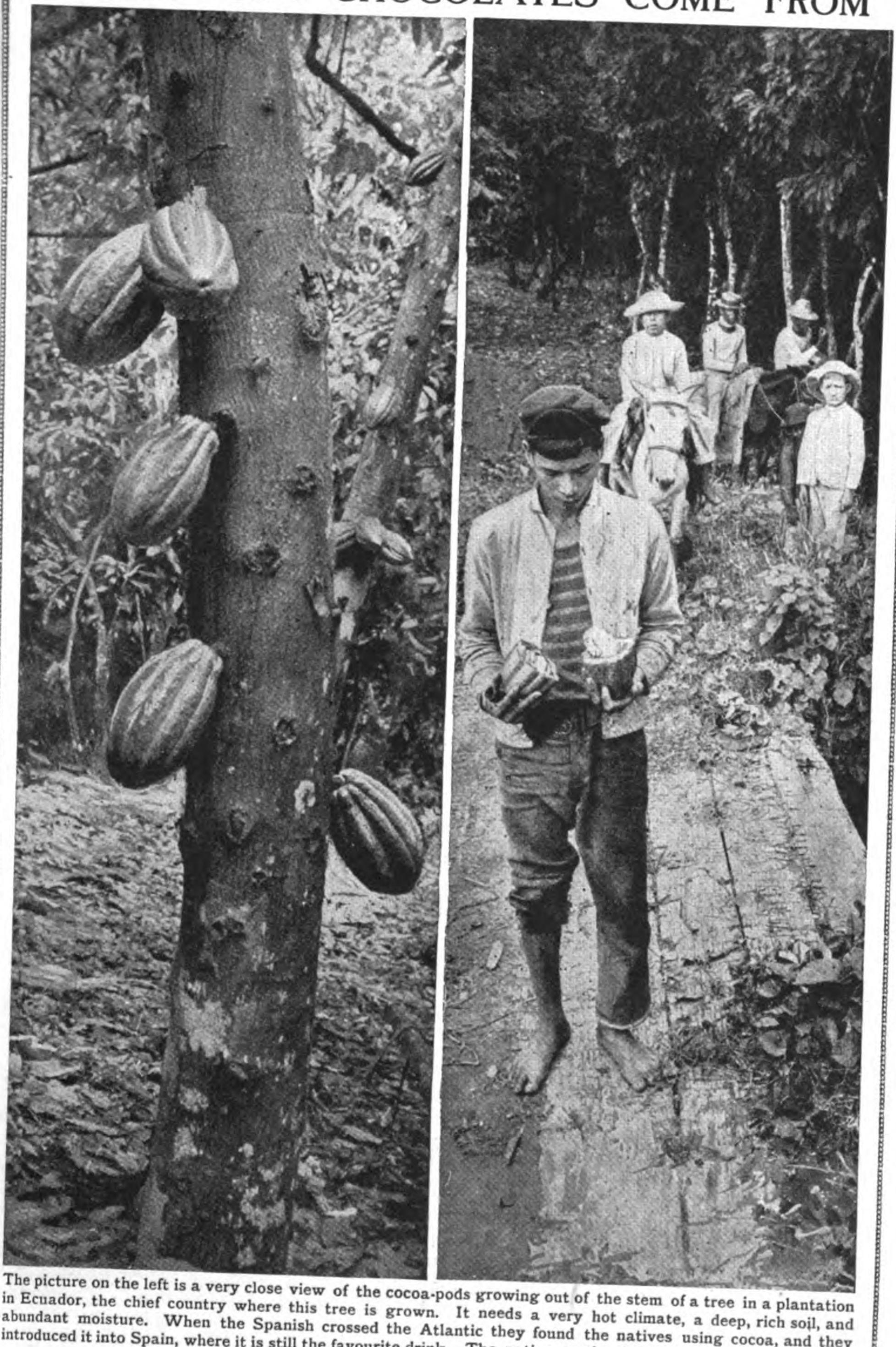
In this cocoa-bean plantation the natives are busy cutting off the pods from the barks of the trees. In the picture on the previous page they are opening pods.



The work of drying the beans, which is being done in the garden seen in this picture, is undertaken immediately after they have been extracted from the pods. The beans are exposed in shallow boxes to the blazing sun, and **are from time to time turned over so that all the beans get the heat. These pictures were taken in Ecuador.**

Photos, copyright by Underwood & Underwood, N. Y.

WHERE THE CHOCOLATES COME FROM



The picture on the left is a very close view of the cocoa-pods growing out of the stem of a tree in a plantation in Ecuador, the chief country where this tree is grown. It needs a very hot climate, a deep, rich soil, and abundant moisture. When the Spanish crossed the Atlantic they found the natives using cocoa, and they introduced it into Spain, where it is still the favourite drink. The native on the right has split one of the pods.

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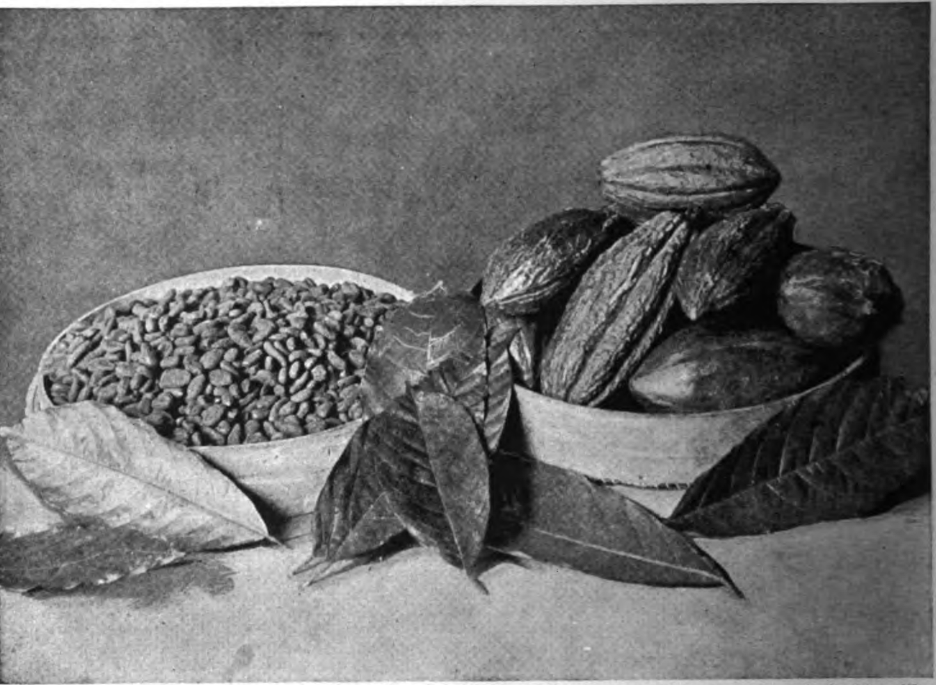
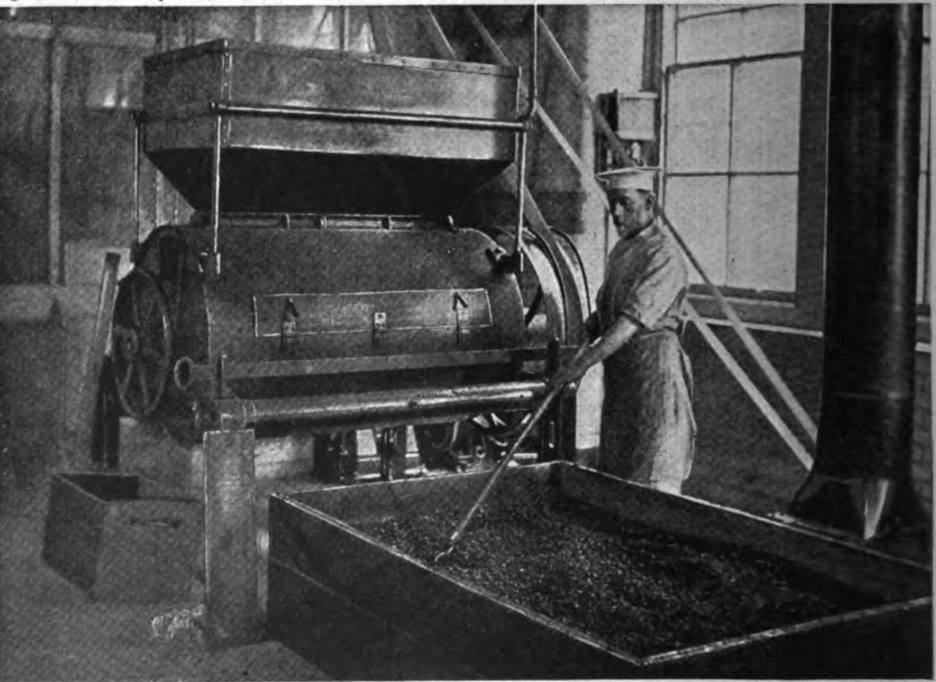
THE BEGINNING OF A CHOCOLATE CREAM

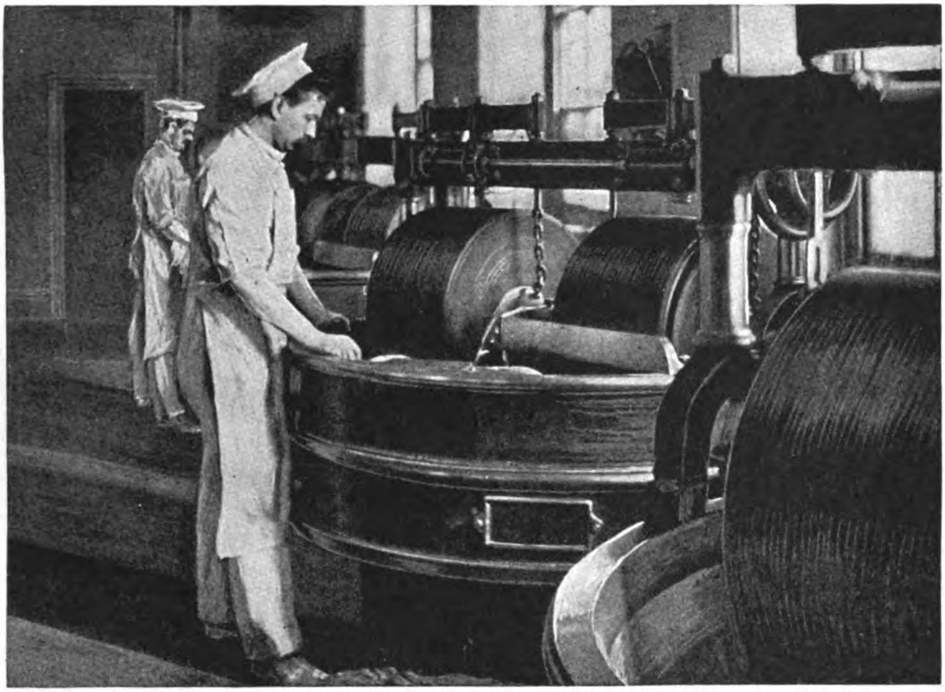


These are the cocoa-beans as you see them when they arrive at the factory. They grow in pods, looking like cucumbers, on trees in the West Indies, in the hottest parts of America, and in Africa. The pods, seen on the right, have to be opened, and the beans are taken out and dried. On the left of the picture we see the beans.

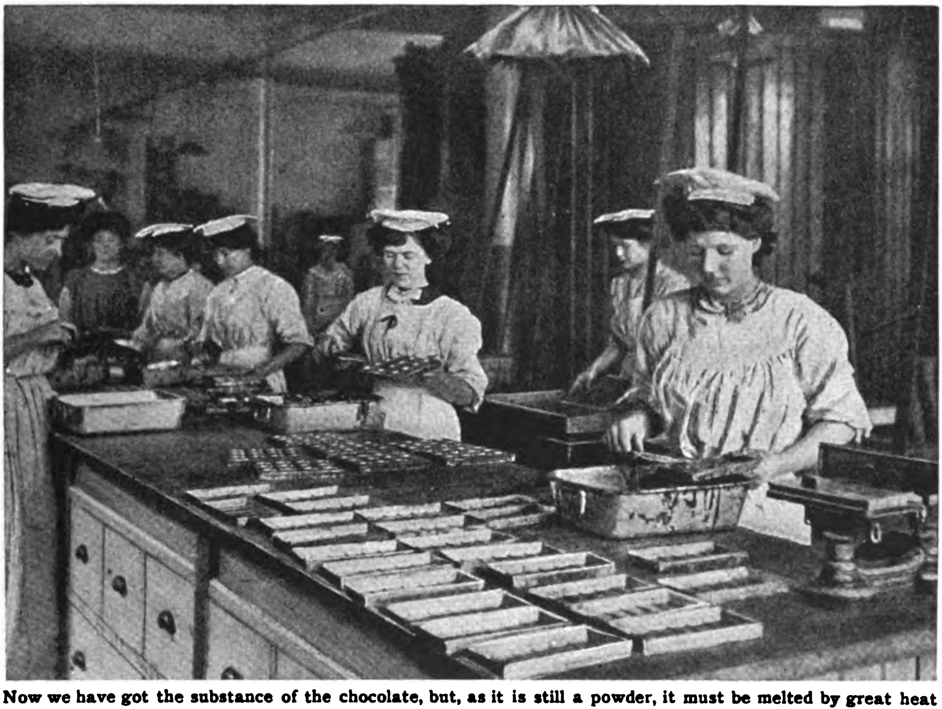


The cocoa-tree belongs to a family of trees called by a Greek name meaning "food for the gods." We should not think the cocoa-bean food for any human being if we tasted it in its natural state. It is then oily and bitter. So we improve it first by thoroughly roasting it. This picture shows the man roasting the beans.

FROM GRINDING MILL TO CHOCOLATE MOULD

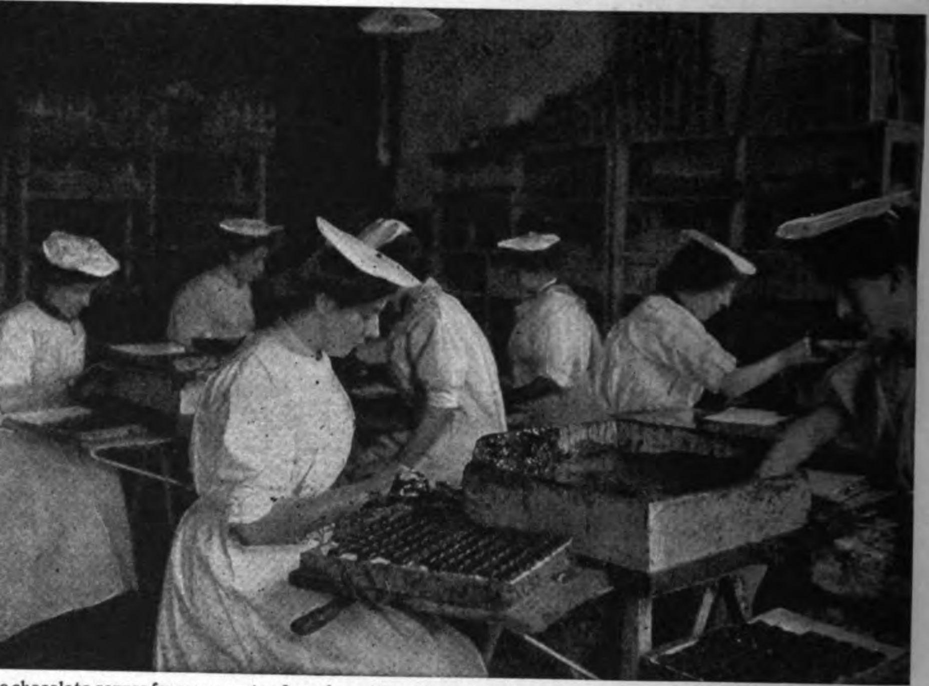


When roasted and broken up, the bean will make either cocoa to drink or chocolate to eat. Here chocolate is being made for our candy stores, so the baked bean is ground in mills. The beans come out of these in the form of powder, and fine sugar is afterwards mixed with it to give the chocolate a pleasant taste.

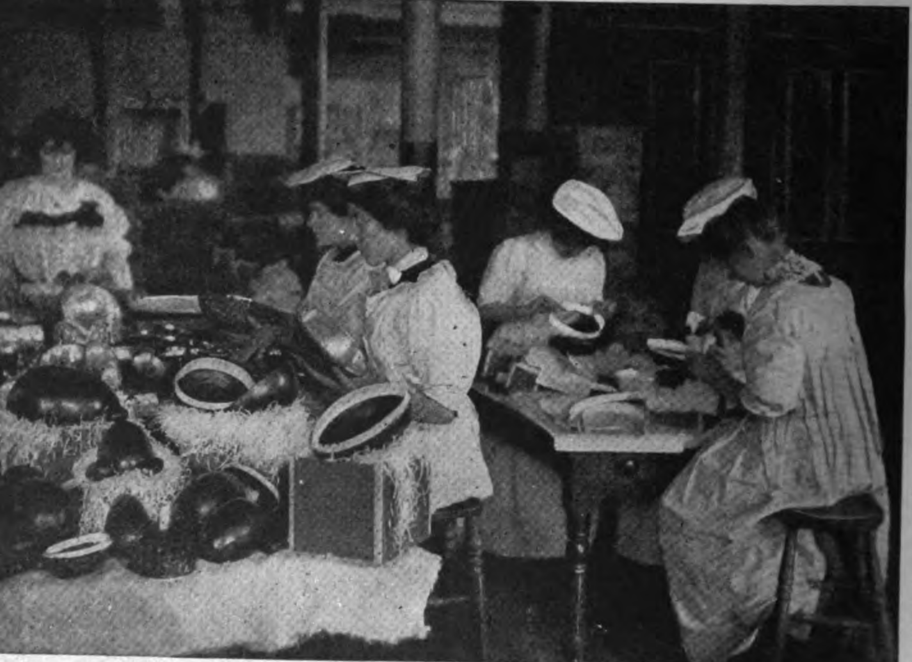


Now we have got the substance of the chocolate, but, as it is still a powder, it must be melted by great heat into liquid paste, so that girls can pour it into moulds, which will make it, when cool, into pretty shapes.

WHERE THE EASTER EGGS COME FROM

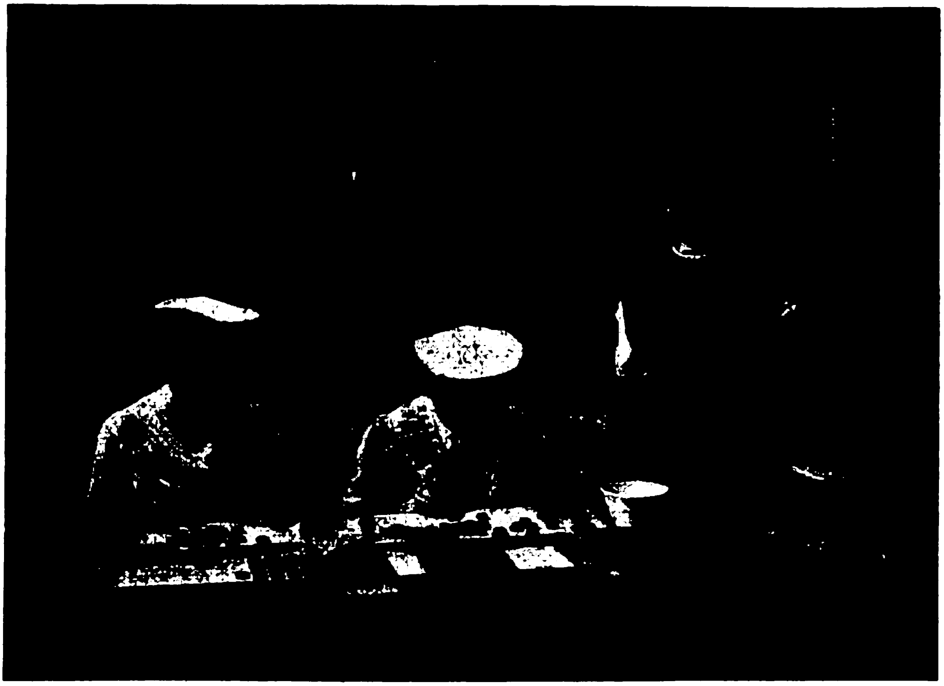


e chocolate serves for many sorts of candy. Almonds and various other nuts are used, and dainty pastes, made
o solid balls, are here being dipped into the chocolate, which forms a smooth and pleasant coating over them.

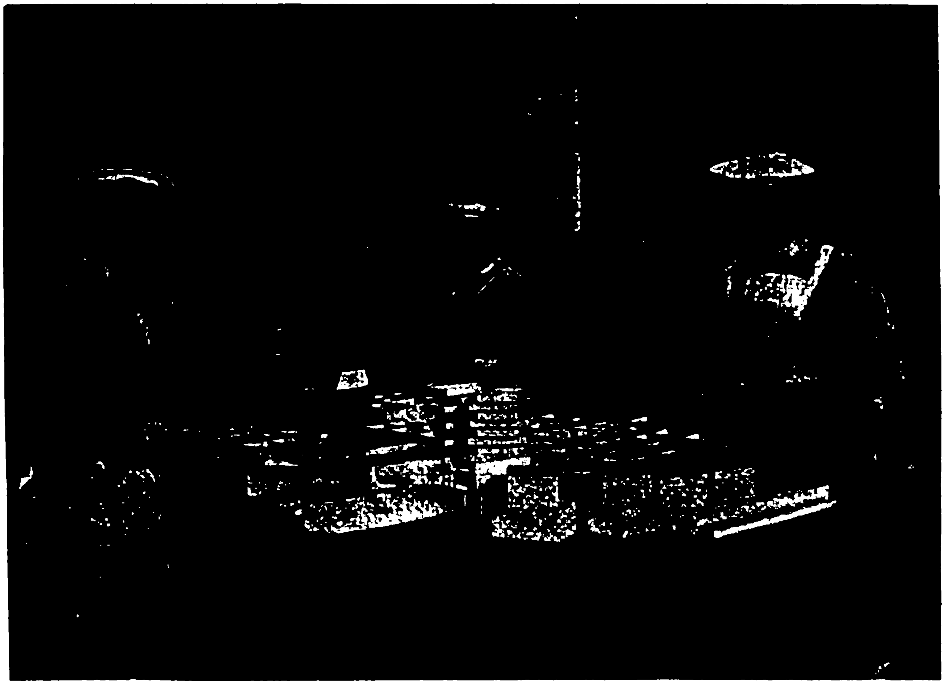


girls are here making chocolate Easter eggs. They are fitted with hoops of smooth white cardboard,
h will make the two halves of the egg fasten together, so that pretty presents may be put inside.

MAKING THE CHOCOLATES LOOK TEMPTING

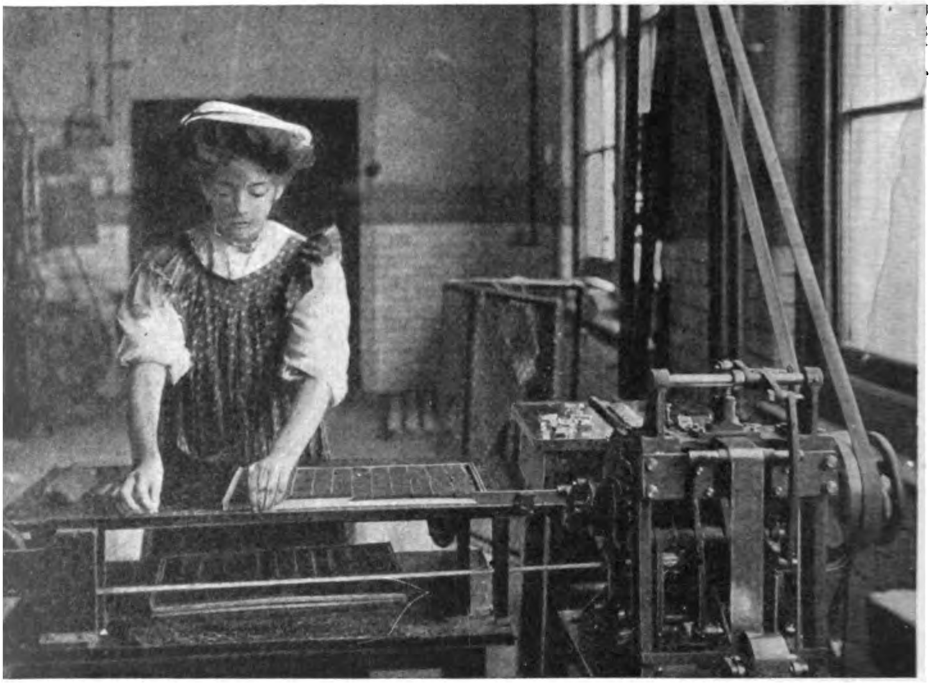


Good candy must please the eye as well as the palate. The girls have basins of liquid sweetstuff beside them, and with a few touches of this they make a chocolate look twice as tempting as it did before.



So many varieties of chocolates are made in the factory that they have to be sorted as they come from the trays of the makers. Then they are ready to be packed in boxes, or to be sent in trays to the stores to be sold loose.

HE MACHINE AND ITS SILVER PAPER



ne of the most interesting parts of the packing up of the chocolates is that done by this machine. A irl places the chocolates on a moving band, which carries them along the machine to a ribbon of tinfoil, or lver paper, as we call it. The machine then does a wonderful thing, wrapping each chocolate up separately.

he packers of chocolates do not forget that the eye as well as the mouth must be considered. Good chocolates re always pleasant, but they seem far more so when done up in a dainty box decorated with gay ribbon.

THE NEXT FAMILIAR THINGS BEGIN ON PAGE 2319

WHAT THIS STORY TELLS US

WASHINGTON IRVING'S Knickerbocker History of New York, from which this selection is taken, was published more than one hundred years ago. The work pretended to be written by an old Dutchman named Diedrich Knickerbocker, and described in humourous style the manners and customs of the early Dutch settlers of New Amsterdam, now New York. It gave sketches of the four Dutch governors Peter Minuit, Wouter Van Twiller, Wilhelm Kieft and Peter Stuyvesant. The descriptions are exaggerated, of course, but nevertheless have a basis of truth. This extract is taken from the chapter dealing with Wouter Van Twiller.

KNICKERBOCKER DAYS IN NEW YORK

THE modern spectator, who wanders through the streets of this populous city, can scarcely form an idea of the different appearance they presented in the primitive days of the Governor, Wouter Van Twiller. The busy hum of multitudes, the shouts of revelry, the rumbling equipages of fashion, the rattling of accursed carts, and all the spirit-grieving sounds of brawling commerce, were unknown in the settlement of New Amsterdam. The grass grew quietly in the highways — the bleating sheep and frolicsome calves sported about the verdant ridge where now the Broadway loungers take their morning stroll — the cunning fox or ravenous wolf skulked in the woods where now are to be seen the dens of Gomez and his righteous fraternity of money brokers — and flocks of vociferous geese cackled about the fields where now the great Tammany wigwam and the patriotic tavern of Martling echo with the wranglings of the mob.

In these good times did a true and enviable equality of rank and property prevail, equally removed from the arrogance of wealth, and the servility and heartburnings of repining poverty — and what in my mind is still more conducive to tranquillity and harmony among friends, a happy equality of intellect was likewise to be seen. The minds of the good burghers of New Amsterdam seemed all to have been cast in one mold, and to be those honest, blunt minds which, like certain manufactures, are made by the gross, and considered as exceedingly good for common use.

Thus it happens that your true dull minds are generally preferred for public employ, and especially promoted to city honours, — your keen intellects, like razors, being considered too sharp for common service. I know that it is common to rail at the unequal distribution of riches, as the great source of jealousies, broils, and heartbreakings; whereas, for my part, I verily believe it is the sad inequality of intellect that prevails, that embroils communities more than anything else; and I have remarked that your knowing people, who are so much wiser than anybody else, are eternally keeping society in a ferment. Happily for New Amsterdam, nothing of the kind was known within its walls — the very words of learning, education, taste, and talents were unheard of — a bright genius was an animal unknown, and a bluestocking lady would have been regarded with as much wonder as a horned frog or a fiery dragon. No man, in fact, seemed to know more than his neighbour, nor any man to know more than an honest man ought to know, who has nobody's business to mind but his own; the parson and the council clerk were the only men that could read in the community, and the sage Van Twiller always signed his name with a cross.

The person of this illustrious old gentleman was as regularly formed, and nobly proportioned, as though it had been modelled by the hands of some cunning Dutch statuary, as a model of majesty and lordly grandeur. He was exactly five feet six inches in height, and six feet five inches in circumference. His head was a perfect sphere, and of such stupendous dimensions, that Dame Nature, with all her sex's ingenuity, would have been puzzled to construct a neck capable of supporting it; wherefore she wisely declined the attempt, and settled it firmly on the top of his backbone, just between the shoulders. His body was of an oblong form, particularly capacious at bottom; which was wisely ordered by Providence, seeing that he was a man of sedentary habits, and very averse to the idle labour of walking. His legs, though exceeding short, were sturdy in proportion to the weight they had to sustain; so that when erect he had not a little the appearance of a robustious beer barrel, standing on skids. His face, that infallible index of the mind, presented a vast expanse, perfectly unfurrowed or deformed by any of those lines and angles which disfigure the human countenance with what is termed expression. Two small gray eyes twinkled feebly in the midst, like two stars of lesser magnitude in the hazy firmament; and his full-fed cheeks, which seemed to have taken toll of everything that went into his mouth, were curiously mottled and streaked with dusky red, like a Spitzenberg apple.

His habits were as regular as his person. He daily took his four stated meals, appropriating exactly an hour to each; he smoked and doubted eight hours, and he slept the remaining twelve of the four and twenty. Such was the renowned Wouter Van Twiller — a true philosopher, for his mind was either elevated above, or tranquilly settled below, the cares and perplexities of this world. He had lived in it for years, without feeling the least curiosity to know whether the sun revolved round it, or it round the sun; and he had watched, for at least half a century, the smoke curling from his pipe to the ceiling, without once troubling his head with any of those numerous theories, by which a philosopher would have perplexed his brain, in accounting for its rising above the surrounding atmosphere.

Such are the comfortable and thriving effects of a fat government. The province of the New Netherlands, destitute of wealth, possessed a sweet tranquillity that wealth could never purchase. There were neither public commotions, nor private quarrels; neither parties, nor sects, nor schisms; neither persecutions, nor trials, nor punishments; nor were there counsellors, attorneys, catchpoles, or hangmen. Every man attended to what little business he was lucky enough to have, or neglected it if he pleased, without asking the opinion of his neighbour. In those days, nobody meddled with concerns above his comprehension, nor thrust his nose into other people's affairs; nor neglected to correct his own conduct, and reform his own character, in his zeal to pull to pieces the characters of others — but in a word, every respectable citizen ate when he was not hungry, drank when he was not thirsty, and went regularly to bed when the sun set, and the fowls went to roost, whether he were sleepy or not; all which tended so remarkably to the population of the settlement, that I am told every dutiful wife throughout New Amsterdam made a point of enriching her husband with at least one child a year, and very often a brace — this superabundance of good things clearly constituting the true luxury of life, according to the favourite Dutch maxim, that "more than enough constitutes a feast."

The houses of the higher class were generally constructed of wood, excepting the gable end, which was of small black and yellow Dutch bricks, and always faced on the street, as our ancestors, like their descendants, were very much given to outward show, and were noted for putting the best leg foremost. The house was always furnished with abundance of large doors and small windows on every floor; the date of its erection was curiously designated by iron figures on the front; and on the top of the roof was perched a fierce little weathercock, to let the family into the important secret which way the wind blew. These, like the weathercocks on the tops of our steeples, pointed so many different ways, that every man could have a wind to his mind; — the most stanch and loyal citizens, however, always went according to the weathercock on the top of the governor's house, which was certainly the most correct, as he had a trusty servant employed every morning to climb up and set it to the right quarter.

In those good days of simplicity and sunshine, a passion for cleanliness was the leading principle in domestic economy, and the universal test of an able housewife — a character which formed the utmost ambition of our unenlightened grandmothers. The front door was never opened except on marriages, funerals, new-year's days, the festival of St. Nicholas, or some such great occasion. It was ornamented with a gorgeous brass knocker, curiously wrought, sometimes in the device of a dog, and sometimes of a lion's head, and was daily burnished with such religious zeal, that it was ofttimes worn out by the very precautions taken for its preservation. The whole house was constantly in a state of inundation, under the discipline of mops and brooms and scrubbing brushes; and the good housewives of those days were a kind of amphibious animal, delighting exceedingly to be dabbling in water — insomuch that a historian of the day gravely tells us that many of his townswomen grew to have webbed fingers like unto a duck; and some of them, he had little doubt, could the matter be examined into, would be found to have the tails of mermaids — but this I look upon to be a mere sport of fancy, or what is worse a wilful misrepresentation.

The grand parlour was the sanctum sanctorum, where the passion for cleaning was indulged without control. In this sacred apartment no one was permitted to enter, excepting the mistress and her confidential maid, who visited it once a week, for the purpose of giving it a thorough cleaning, and putting things to rights — always taking the precaution of leaving their shoes at the door, and entering devoutly in their stocking feet. After scrubbing the floor, sprinkling it with fine white sand, which was curiously stroked into angles, and curves and rhomboids, with a broom, — after washing the windows, rubbing and polishing the furniture, and putting a new bunch of evergreens in the fireplace — the window shutters were again closed to keep out the flies, and the room carefully locked up until the revolution of time brought round the weekly cleaning day.

As to the family they always entered in at the gate, and most generally lived in the kitchen. To have seen a numerous household assembled around the fire, one would have imagined that he was transported back to those happy days of primeval simplicity, which float before our imaginations like golden visions. The fireplaces were of a truly patriarchal magnitude, where the whole family, old and young, master and servant, black and white, nay, even the very cat and dog, enjoyed a community of privilege, and had each a right to a corner. Here the old burgher would sit in perfect silence, puffing his pipe, looking in the fire with half shut eyes, and thinking of nothing for hours together; the goede vrouw on the opposite side would employ herself diligently in spinning yarn or knitting stockings. The young folks would crowd around the hearth, listening with breathless attention to some old crone of a negro, who was the oracle of the family, and who, perched like a raven in a corner of the chimney, would croak forth for a long winter afternoon a string of incredible stories about New England witches — grisly ghosts, horses without heads — and hairbreadth escapes and bloody encounters among the Indians.

In those happy days a well-regulated family always rose with the dawn, dined at eleven, and went to bed at sundown. Dinner was invariably a private meal, and the fat old burghers showed incontestable symptoms of disapprobation and uneasiness at being surprised by a visit from a neighbour on such occasions. But though our worthy ancestors were singularly averse to giving dinners, yet they kept up the social bands of intimacy by occasional banquetings, called tea parties.

These fashionable parties were generally confined to the higher classes, or noblesse, that is to say, such as kept their own cows, and drove their own wagons. The company commonly assembled at three o'clock, and went away about six, unless it was in winter time, when the fashionable hours were a little earlier, that the ladies might get home before dark. The tea table was crowned with a huge earthen dish, well stored with slices of fat pork, fried brown, cut up into morsels, and swimming in gravy. The company being seated around the genial board, and each furnished with a fork, evinced their dexterity in launching at the fattest pieces in this mighty dish — in much the same manner as sailors harpoon porpoises at sea, or our Indians spear salmons in the lakes. Sometimes the table was graced with immense apple pies, or saucers full of preserved peaches and pears; but it was always sure to boast an enormous dish of balls of sweetened dough, fried in hog's fat, and called doughnuts, or olykoeks — a delicious kind of cake, at present scarce known in this city, excepting in genuine Dutch families.

The tea was served out of a majestic delft teapot, ornamented with paintings of fat little Dutch shepherds and shepherdesses tending pigs — with boats sailing in the air, and houses built in the clouds, and sundry other ingenious Dutch fantasies. The beaux distinguished themselves by their adroitness in replenishing this pot from a huge copper teakettle, which would have made the pigmy macaronies of these degenerate days sweat merely to look at it. To sweeten the beverage, a lump of sugar was laid beside each cup — and the company alternately nibbled and sipped with great decorum, until an improvement was introduced by a shrewd and economic old lady, which was to suspend a large lump directly over the tea table, by a string from the ceiling, so that it could be swung from mouth to mouth — an ingenious expedient which is still kept up by some families in Albany; but which prevails without exception in Communipaw, Bergen, Flatbush, and all our uncontaminated Dutch villages.

At these primitive tea parties the utmost propriety and dignity of deportment prevailed. No flirting or coquetting — no gambling of old ladies, nor hoyden chattering and romping of young ones — no self-satisfied struttings of wealthy gentlemen, with their brains in their pockets — nor amusing conceits, and monkey advertisements, of smart young gentlemen with no brains at all. On the contrary, the young ladies seated themselves demurely in their rush-bottomed chairs, and knit their own woollen stockings; nor ever opened their lips, excepting to say, yah, Mynheer, or yah, Vrouw, to any question that was asked them; behaving, in all things, like decent, well-educated damsels. As to the gentlemen, each of them tranquilly smoked his pipe, and seemed lost in contemplation of the blue and white tiles with which the fireplaces were decorated; wherein sundry passages of Scripture were piously portrayed — Tobit and his dog figured to great advantage; Haman swung conspicuously on his gibbet; and Jonah appeared most manfully bouncing out of the whale.

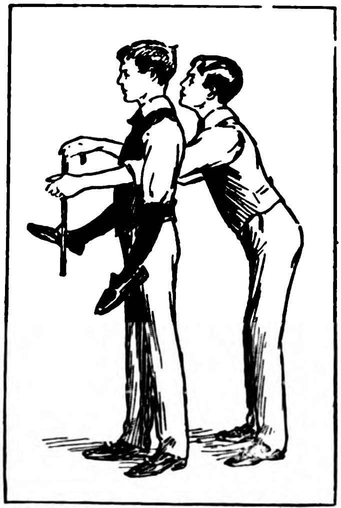
The parties broke up without noise and without confusion. They were carried home by their own carriages, that is to say, by the vehicles Nature had provided them, excepting such of the wealthy as could afford to keep a wagon. The gentlemen gallantly attended their fair ones to their respective abodes, and took leave of them with a hearty smack at the door; which, as it was an established piece of etiquette, done in perfect simplicity and honesty of heart, occasioned no scandal at that time, nor should it at the present — if our great-grandfathers approved of the custom, it would argue a great want of reverence in their descendants to say a word against it.

THE LIVING MARIONETTE

CONTINUED FROM 2139

This is a variety of entertainment that causes great diversion, and it is not at all difficult to do. Two players—one of them able to sing funny songs, to recite, and to tell stories—may give genuine entertainment to a large company by a living marionette performance. Almost any house contains all the apparatus required for the performance, as a few cast-off garments are all that are necessary in the way of attire.

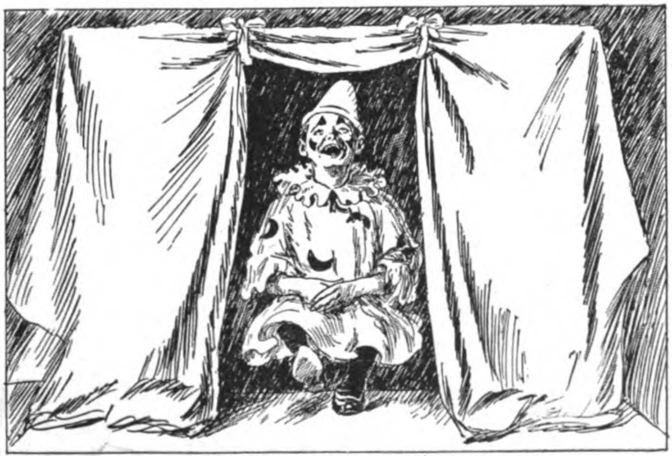
The name often given to the entertainment is the German Dwarf, but a rather more appropriate name is the Living Marionette. A marionette is a doll, or puppet, that is made to walk, dance, or do acrobatic feats by pulling strings attached to it, and concealed from the audience. The living marionette is not a doll, but is living, and seems to be a little man or boy about two feet high, with an amount of agility that no boy possesses.



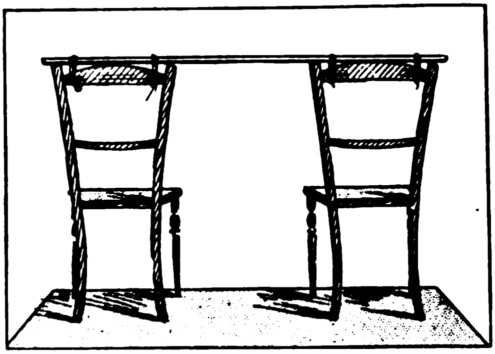
1. Making up for the living marionette

Two boys give the entertainment, and the first thing they must do is to provide a miniature stage. A table will do nicely, but it should have above it a curtain, or some dark cloth. Picture 3 shows how to construct a very good, but a very simple, curtained stage. Here two chairs are placed on the table with a space between them, and a long stick, or pole, is tied to the top rail, going right across both. From this stick, or pole, a curtain is hung so as to represent the surrounding of a little stage, which, as seen by the audience, looks like picture 2. Another good way to make a stage is to arrange a tall clothes-horse with a small board across two of the rails, and then to hang it with a curtain or a cloth. This method is possible only when a clothes-horse with the middle rail of a convenient height is available. This sort of stage without the curtain is shown in picture 4. Yet a third way, perhaps the best of all, is possible only when there are two rooms, one leading into the other. A small table, or box of the height of a table, is placed in the doorway, and curtains, or a dark cloth, hangs from the top of the door. Whatever kind of stage may be used, there should be no lights behind it, as a light might show the audience too much.

We will suppose that the stage is made, and that the two players are ready to attire themselves for

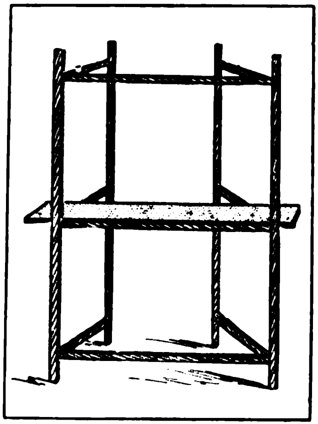


2. The living marionette on the stage



3. Stage made with table and two chairs

the performance. One of the boy players, the one who can sing and recite, draws over each hand and up each arm a stocking, and then puts a slipper on each hand. Perhaps, in the dressing up, it would be better to have a stage manager, and a girl makes a very good stage manager. The skill of a girl in the art of make-up is usually greater than that of a boy. Picture 1 shows two boys getting ready for the performance.



4. Stage made with clothes-horse

The second boy takes a handkerchief, or a pair of gloves, or a short cane in his hand, and puts his arms around the body of the first boy just under his armpits, as seen in picture 1. Now the stage manager, or manageress, drapes the two boys with a large cloak, or other article of attire, taking care to show the face of one boy only, and leaving visible the hands of the second boy and also the hands of the first boy with the slippers and stockings on. The marionette is ready to give his performance. He takes his stand on the stage, as seen in picture 2, which is a view of the stage from the front, where the audience will be sitting. When everything is in place the stage manager lifts or draws aside the curtain, and makes a little introductory speech:

"Ladies and gentlemen, you see before you the only genuine Circassian dwarf who has ever been taught English. His name is Pimpleskivitch, and, although you will not believe it, he is 365 years old. He has just escaped from Russia, as he thinks he has lived long enough in one country. He arrived the day before yesterday, and has since then learned English perfectly. He will now give you his performance. Pimpleskivitch, begin!"

5. Photograph of a living marionette

The stage manager retires, and the dwarf begins. As he sings, or recites, or tells stories, he slaps the stage with his feet (really his slippered hands), and his hands (really the hands of the boy who is concealed from view) move about, wipe his face with the handkerchief, or twirl the cane. The effect is very amusing if the performer who is seen is able to keep up a running fire of entertainment. The boy behind must keep his body perfectly still, moving nothing but his hands. His is the most unpleasant part, because he cannot see what is going on, although he can hear the laughter and applause. The effect is heightened if the dwarf, or marionette, is provided with a false face, false nose, or false beard, or, if these be not available, he may have his face rubbed with a burnt cork, in which case he can appear as a genuine Congo dwarf.

A photograph of two boys giving their entertainment of a living marionette is drawn in picture 5. In this case they are made up to represent a dwarf woman. Picture 2, as may be seen, shows a clown, and this make-up can easily be made by the help of a piece of calico and a few pins. A good deal depends upon the make-up, as a really funny make-up strikes the audience right away, and makes the songs and jokes and dances seem much funnier than they would with a poor make-up. Especially if the performer is rather deficient in humour, he should have a particularly good make-up. With a wider stage two pairs of performers may exhibit at the same time. This increases the probability of success of the entertainment, as it gives the opportunity for dialogue. When there are two pairs of performers it is best that one pair should represent a dwarf woman and the other a dwarf man. Even although this entertainment is very simple, it should be practised once or twice in private before the first public performance is given. Also the songs or jokes should be carefully committed to memory, that no hitch may occur in the performance.

A CHRISTMAS-TREE FOR THE BIRDS

CHRISTMAS would not be Christmas without a Christmas-tree. But have you ever thought, when you have been enjoying yourself, that the winter, which brings lots of fun for all of us, is a very uncomfortable time for the poor things who have not any warm homes?

Perhaps, on some cold morning, you have looked out of your window, and have watched the birds flying about among the bare branches of the trees in the garden, searching the ground in the hope that some kind person has thrown out a few crumbs for them?

Have you not sometimes wished there was a Santa Claus to bring a tree full of good things for the birds? Perhaps it never occurred to you that *you* might be the birds' Santa Claus? Well, we are going to see how to make a Christmas-tree for those poor little mites.

First, we must get a small fir-tree that can be put into a pot. Probably we shall find one in the garden, and will be allowed to dig it up. If not, we can buy one about Christmas-time for a quarter.

When we have got our tree planted in a large flower-pot, we must get some small baskets—the tiny ones that candy is sold in will do splendidly—and tie these baskets to the branches of the tree. We can put all sorts of things into these baskets—bread-crumbs, nuts, little pieces of crust or toast from the breakfast table, or some of the seeds that are given to tame birds.

Then we must hang up tiny pieces of cocoa-nut. These are for the tomtits, and there is nothing that they like so well. Other birds are very fond of little pieces of suet.

We can make our Christmas-tree look very pretty with some bright pieces of cloth and ribbon, or coloured paper made into little bags to hold bread-crumbs, and then, when it is quite finished, we must put it out in the garden or on the window-ledge of our own room. At first the birds will not understand, because nobody has ever taken the trouble to make a Christmas-tree for them before, and perhaps they will think it is some sort of trap. But presently some of the bravest ones will come. Then we shall see them perch on the branches, and look round in every direction to see if there is any danger.

A CHRISTMAS-TREE FOR THE BIRDS

We can watch them through the window, and they will not be frightened if we do not move. As long as we keep quite still, they will not think we are going to hurt them.

In a little time the birds will put their little heads in the baskets, and give a little twitter of delight when they find the good things there. Other birds will be watching them from the trees, and, when these see that the braver ones have not been hurt, they will come too. When the tree has been out a little while, we shall see perhaps forty or fifty birds of all sorts fluttering round it.

When they have eaten everything, we can refill the baskets. Then next morning we should put the tree out again, and we shall be surprised to find that all the birds will be waiting. They will have told all their friends, too, and those who came the first day will have been spreading the news of the wonderful tree for miles round.

If you watch them carefully, you will find that you can recognise many of them, because there is just as much difference between birds as there is between people, if only you look at them closely. And they have all sorts of different characters, too. Some are quarrelsome and some are timid. Some try to push the other birds away when they have found a little basket full of good things, and others are generous little fellows who call the others to help them enjoy anything very good.

If we put our Christmas-tree out every day for a week, we shall find that by degrees the birds grow more and more tame, till at last we can stand quite close to the tree and watch them. If we are careful (the great secret is never to move quickly) the robins, which are the boldest of all our birds, will learn in time to take bread-crumbs from our hand, but we must not be angry with them if they will not do this at first, because we must remember that we seem great giants to them, and some people are so cruel that we must give them time to learn to trust us and treat us as their friends.

A CHRISTMAS GYMKHANA

"A GYMKHANA," Meg explained very carefully, "is a party at which everybody plays new kinds of games—funny games that make you laugh, and exciting games, with prizes for those who win."

When all the children had arrived, they found that the drawing-room had been almost cleared as if a dance were to take place; but down the centre of the room they saw two rows of bottles standing upright, with little Christmas-tree flags stuck into the corks. There were eight bottles in each row.

The children could not think what they were for until Meg explained. She said that the first game was to be a driving match. Two girls were to be blindfolded and harnessed together with ribbons, and a boy would drive them up and down the room and would steer them first to the right and then to the left between the bottles, so that none of them upset.

Two boys and four girls would begin together, and the team that got back to the starting-place first would win.

Everything was arranged in a minute or two, and the girls, with handkerchiefs over their eyes and the harness of bright-coloured ribbons tied to their arms, stood ready to run the moment the word was given.

The boys who were to drive them were told that they must not speak to the girls, but must steer them between the bottles by pulling on the reins.

Everyone was quite silent while Meg clapped her hands and then called out, "One—two—three. Go!"

The girls dashed off in a moment, and the boys had to hold them back with the reins to keep them from going too fast. Of course, the boys could see where they were going, but the girls could not, and sometimes they all got so excited that, when the driver tugged at the reins one way, they all went off in another direction. One team turned right round and went in the wrong way altogether, and before they could be got right again they had upset two of the bottles.

One team got to the end of the row of bottles without upsetting a single one, and then turned round to come back. But they turned the wrong way, and ran right into the others and all got mixed up.

At last they got the reins untangled, and then there was a fine race down the room. The two teams were so close at the finish that everyone thought they would get back together, but at the last moment one of the girls just touched one of the bottles with her dress and knocked it over. This stopped them for a second, and so the other team won.

After this first driving race everybody wanted to try, and Meg said that the teams that won must stand on one side of the room and those that lost on the other. Afterwards, those that won would try again, and go on trying until they were beaten.

Of course, after about half an hour there were only two teams left, and then came the most exciting race of all, because the one that won this time would have the prize.

When all the driving races were over, Meg said they would have an "egg and fan race."

Two egg-shells were brought in. They were quite hollow, for the inside parts had been blown out through little holes made at each end with a pin.

These two eggs were placed on the floor, and two boys were told that they must crawl along and blow them to the other end of the room, where two girls would be waiting with fans. The girls would have to fan the eggs back to the starting-point, and, of course, the one that got back first would win. This was even better fun than the driving race, because the boys looked so funny crawling along on their knees and trying to blow the eggs so as to make them go straight. It was much more difficult than it looked, because the eggs were not round, and therefore they would roll off in every way but the right one.

The girls found that it was even worse to fan the eggs along than to blow them, for, instead of going straight, they would go first on one side of the room and then on the other. One girl got so angry with her egg that she gave it a bang with her fan and broke it.

The children who were watching laughed so much that they thought they could not laugh any more; but Meg presently suggested another race more exciting still.

Two big clothes-baskets were brought in, and to each one there was tied a rope long enough to reach from one end of the room to the other. The baskets were placed at one end and the ropes stretched to the other.

Then two boys and two girls had to stand together, and when Meg called out "Go!" the girls ran down the room as hard as they could and jumped into the baskets. The boys had to pull them back with the ropes.

This was great fun. The boys tugged and tugged, and first one basket with a girl in it would be in front, and then the other. All the children shouted, and said that this was the best sort of race yet. The girls were so anxious to try that they could hardly wait for their turns. It was so fascinating to be pulled along like that, especially when the baskets were so close together that no one could tell which would win.

When all the races were over, Meg said they would finish up the evening with a dance—but not an ordinary sort of dance. It was to be what she called a cotillon.

Instead of the boys asking the girls to dance, the girls would choose their partners, but they would have to do this in all sorts of funny ways.

Meg brought in a big doll made of pillows, dressed up in one of her own dresses.

She put two chairs in the middle of the room, and then made the pillow-doll sit on one chair and one of the girls on the other. Then two boys came, and the girl had to give the doll to the boy she did not want to dance with, and then she waltzed round the room with the other boy.

This looked very funny, because one boy always had to dance with the doll, and it looked perfectly absurd.

A CHRISTMAS CHARADE

Here is a pretty little charade that can be entirely acted by children. It would make a charming entertainment for Christmas Eve, and would not only interest young people, but would be amusing to everybody in the audience. The word that is to be guessed is, of course, hidden in the scenes of the little play.

The charade can be acted in a drawing-room without much preparation. All you will have to do is to move the necessary furniture to one end of the room, and then place a lot of chairs at the other end for the audience.

If possible, try to arrange things so that the part of the room that will be your stage is close to the door. Then the actors will be able to make their entrances and exits nicely. If this cannot be done, a screen should be put up, and the performers must remain behind this when they are not acting.

FIRST SCENE

A room. At a table Princess Myra is sitting knitting. As she knits she sings:

A Princess sat in a castle grim,
And weary at heart was she,
And her eyes were dim as she thought of him—
A soldier brave
Far across the wave,
A soldier of low degree.

She stops singing and rises from her chair. For a moment she stands listening. Then the door opens, and a young man rushes in and kneels before her.

PRINCESS: Why are you here? You must go! You must go!

BRIAN: I have come so far to see you, Princess. Do not send me away.

PRINCESS: You are in danger here. If my father found you he would have you imprisoned.

BRIAN: Princess, I love you! I have travelled a thousand miles to see you. I cannot go.

PRINCESS: You must! You are in danger!

BRIAN: I am a soldier!

PRINCESS: For my sake you must go.

She places her hands on his shoulders and looks into his face.

BRIAN: You do not love me then?

The Princess turns away and takes up her knitting. She hides her face. For a moment he watches her; then he leans over her shoulder to see at what she has been working.

BRIAN: What are you making, Princess?

PRINCESS: It is but a little thing—a knitted mat of silken threads, such as we ladies make to pass the days. It was for you—see, it is nearly finished.

BRIAN: It is of red silk. Red is for love!

PRINCESS: And 'tis a soldier's colour.

He kisses her. She starts as she hears somebody coming.

PRINCESS: Go! You must go! To-night I will send a letter to you. But now you must leave me.

He kisses her once more and then leaves the room. She leans over the table and covers her face.

SECOND SCENE

Brian is sitting by a bare table, on which is a lighted candle. He is reading a letter. His sword lies in front of him.

BRIAN (*reading aloud*): "I love you, Brian. But if my father knew he would send me far away, and I dare not think of what would happen. Brian, I am a Princess; they say I must marry a Prince, who some day will be a King, like my father. I have given my heart to you, but you must be worthy of it. Go! take your sword and win fame. Come back when you have won a soldier's honour, and then, maybe, my father will ennoble you, and some day consent to our marriage."

For a few moments he sits twisting the letter in his hands. Then he kisses it, and puts it into his pocket.

BRIAN: I must win a soldier's honours. Ah, well, I can but try! It is her wish; and if I lose my life, it is well lost. I must try! I must try!

Taking up his sword he leaves the room.

THIRD SCENE

A room. The Queen, Princess Myra's mother, is standing. Princess Myra is kneeling on the floor before her.

QUEEN: My daughter, for three long years you have shut yourself in this small room. Your eyes have grown red with weeping. Many princely suitors have asked your Royal father for your hand, but to all you have refused to listen. This must not be, my child. The time has come when you must marry one of proper rank.

PRINCESS: Mother, I cannot! I have vowed to marry no one unless he be of my own choice.

QUEEN: This is madness! The Prince we have chosen for you is young, handsome, and brave, a soldier who has risen to save our country and our throne. For his deeds your father has raised him to Royal rank.

PRINCESS: But, mother, I cannot marry one I do not love.

QUEEN: None could help loving so brave a soldier. And his wealth is equal to his bravery.

PRINCESS: I care not for his money. I will not see him.

QUEEN: You shall see him, for he comes now.

Brian enters. He stands watching them for a moment. The Princess is still kneeling before her mother. Suddenly she looks up and sees him.

PRINCESS: Brian! You have come back at last.

She jumps up, runs to him, and throws her arms round him.

BRIAN: At last! Say I am not too late, Princess; say I have not come too late.

PRINCESS: I would have waited for my soldier all my life. I care not if you are poor. I will marry you, and no Prince!

QUEEN: But, child, this is the Prince!

BRIAN: Yes, Princess, I am the Prince of whom the Queen spoke. You sent me away to win fame and fortune with my sword. I have won a soldier's honours, and a fortune that——

PRINCESS: I did not send you away because you were poor, Brian.

BRIAN: 'Twas your father who made me rich that I might have sufficient for our state. Honour and wealth are ours, Princess, and now——

She kisses him, and speaks very softly.

PRINCESS: My Prince!

The hidden syllable in the first scene is *mat;* in the second, *try;* in the third, *money.* The complete word that the audience have to guess is, therefore, *matrimony.*

The Princess should wear a long white dress reaching to her feet. Her hair should be bound with golden bands made out of gilt braid, and round her waist she should wear a golden girdle made of the same braid. The soldier's uniform can be made out of a pair of blue serge trousers and an Eton jacket. A strip of the gold braid must be sewn down each leg of the trousers, and the Eton jacket must be worn with the lapels turned over and pinned across the chest. It should be covered with the material which is called "Turkey Red," and some gold braid should be sewn on the front. A helmet with brass chin-strap can be bought at a toy-shop for a quarter. The sword and belt could be made with wood and silver paper, but the toy-shop ones sold for a quarter look neater.

The Queen should have a dark dress of velvet. From her shoulders should hang a long train of some dark crimson cloth, and cotton-wool should be sewn round the edge to look like ermine. A crown can be made out of cardboard covered with gilt paper.

A LITTLE GARDEN MONTH BY MONTH

WHAT TO DO AT THE END OF DECEMBER

WE shall find that much sharper frosts are to be expected after Christmas and the New Year than before. Even our pot-plants on our window-sills may suffer from frosts at night. A great protection is to be found in newspaper. If we fold one and line the lower part of the window with it we keep out a good deal of cold, and we may quite lightly spread another over the plants themselves. This is the method often employed in cottage homes, and, so long as it is effective, it matters not that it is a homely and rough-and-ready way. It is far better than letting the plants suffer.

But suppose our pot-plants have become bitten by the frost, and we take them into our hands, only to see limp, almost lifeless specimens. What are we to do? First of all we must see to it that not a ray of sunshine touches these frost-bitten plants. We then water them with cold water from the rose of a can all over the foliage, and after that *put them in the dark* for a day or two. It may be that even these measures will not save the plants, but it is the utmost we can do, and sometimes plants really badly frost-bitten have thus been saved.

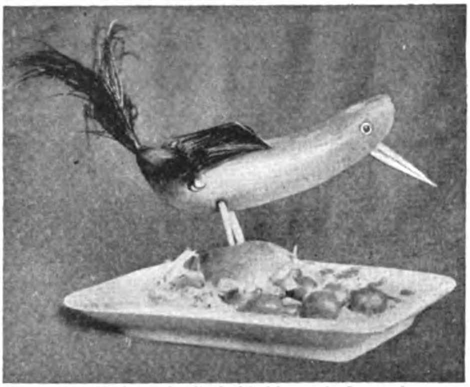
During the winter such plants as geraniums may be allowed to become quite dry before more water is given, and other plants, too, though the soil must never be allowed to become dry as dust in the case of hard-wooded plants like azaleas that already have their flower-buds formed; and, of course, the bulbous plants that we are forcing in pots or growing in shell and fibre must never suffer for lack of moisture. We want to hit the happy medium here—never to keep them sodden with water, nor to let them suffer for want of it. We have to remember that, as we are bringing them forward by growing them in the warmth of our rooms, they are in active growth, and therefore must not receive a check.

We must always remember that, wherever we have plants growing, they are taking up the goodness of the soil, whether in the ground or in pots; not to any great extent at this time of the year, because the majority of plants are making little or no growth—merely, as it were, resting. But with the first breath of spring, life and growth will be stirred into wonderful, silent activity again; new roots will be formed under the soil and new growths above it. If our plants are at that time to make the most of themselves, it is quite likely they will need more food than the soil has to give them, if this should happen to be more or less exhausted. Now, many things make up the plant food-material which we put on the soil to be washed down by the rain or dig into the soil if we get the opportunity. Thus, stable manure, soot, and, on many soils, lime are all very valuable. Then, if we happen to have a heap of leaves that have been decaying for two or three years, we have in this valuable plant soil, and even in burnt refuse, cabbage-stalks, and such stuff; and we may dig that also into the soil—not just at this time, but when growth is restarting, for even burnt vegetable matter helps to feed living plants.

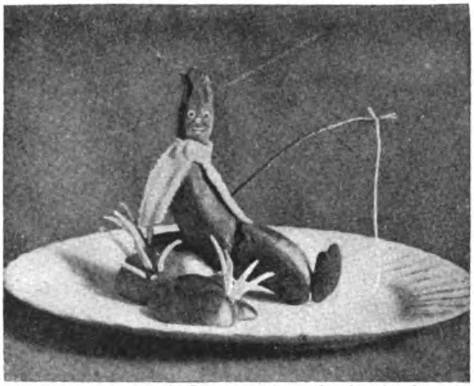
It is rather more difficult to deal with plants in pots, but these, too, may want a little extra feeding at the time when the flower-buds are forming and until they have begun to open. Very weak soot-water may be given occasionally, and this is especially valuable for helping to make the foliage of a deep, healthy hue. Also, in tins, we may buy various fertilisers and concentrated manures, like bone-meal and others, and should follow out the instructions exactly, in giving to the pot-plants. As a rule, a small quantity is dissolved in a can of water and administered in this way. Just an occasional watering, with this plant-food dissolved in it, does much to make fine, healthy plants. But even pot-plants do not need this encouragement in mid-winter.

And now there is one delightful occupation we may give ourselves even when the world is white with snow, and that is to secure a seed catalogue, and go through it again and again to decide, even in these winter days, what we intend to grow to make our gardens beautiful in the summer that will be coming.

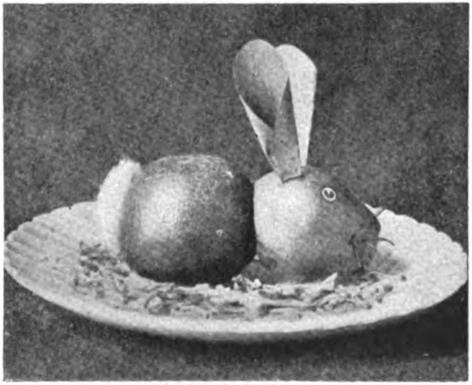
THINGS WE CAN MAKE AT THE DINNER-TABLE



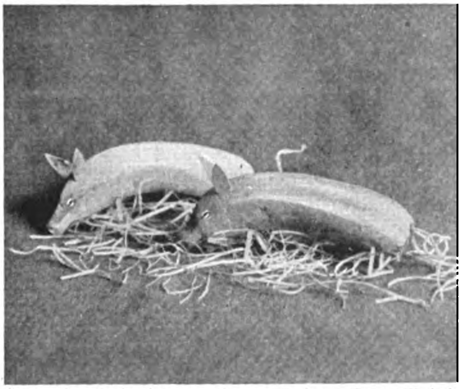
The body of this perky little bird is made from a banana. His beak and two legs are made from an almond. He **stands on a little mound of half an apple, and near by is a nest made of shavings of apple partly dried,** wherein lie four eggs, which are white grapes. His feather tail and wings are formed of real feathers.



The head of this little fisherman is made of a nice fat cobnut with the features in sugar icing, while his body is a banana cut in half and twisted. His feet are two almonds This young man sits and fishes away on a bank formed of two halves of apple, while the rushes at each side are made from thin strips of apple or almond.

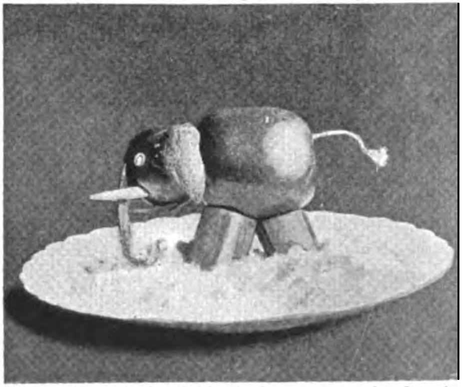


A nice pear forms the head of this rabbit, while his body is a golden orange. His ears are made of wafer paper slightly browned. His eyes are indicated in sugar icing; his whiskers are thin strips of apple, while he reposes on a bed of the same fruit. The only part which is not edible is the small fluffy tail made from a piece of cotton-wool.



A couple of piggies may be made from short, slightl curved bananas. To complete them, insert two ears an four legs made from strips of almond, and a curly tai made from a strip of apple partly dried. Piggy's eye and mouth may be coloured by cochineal. Thin wisp of apple, partly dried and twisted, provide a bed of straw

This quaint clown is made of a banana, his feature **being marked with cochineal, and a piece of almond fo his nose. Three currants are rosettes on his coat two dates form his shoes. On the left a string o raisins is his sausages, and on the right are two leg of mutton, in the form of figs, which Joey has stolen**

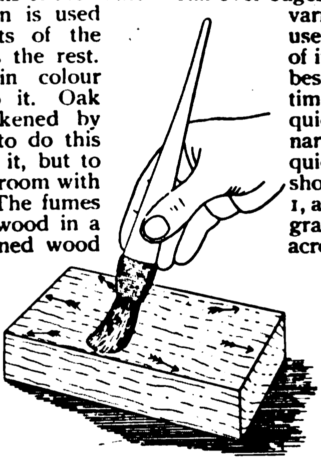


The head and body of this elephant are made of apple secured together by two pieces of almond. Tusks o the same nut are then inserted. The trunk and ears ar cut from candied peel, and slipped into slits in th **head. The legs are pieces of banana, while the tail i a strip of apple partly dried. The ground is sugar icing**

STAINING AND POLISHING WOOD

WOODWORK is stained to improve its natural colour. The difference between stain and paint is that stain sinks into the fibres of the wood, and colours or dyes them, but leaves the grain of the wood showing as plainly as before. Paint forms an opaque coat on the surface which quite conceals the material beneath. Generally stain is used to make a cheap wood look like an expensive one. The colours used are chiefly imitations of walnut, mahogany, rosewood, and other woods. These stains are used on lighter coloured common woods, such as common whitewood, pine, and deal, and only for good appearance and not to deceive people, for anyone with a little experience can tell what the wood really is.

Sometimes, though not often, colours quite different from that of any wood, such as green, blue, or red, are used as stains. Very often fancy woods are darkened and improved in appearance by stains of the same colour as themselves. Stain is used also to darken lighter parts of the wood to the same shade as the rest. Wood may be darkened in colour slightly by rubbing oil into it. Oak and mahogany can be darkened by ammonia. The usual way to do this is not to wet the wood with it, but to shut it up in a case or small room with saucers of liquid ammonia. The fumes of the ammonia darken the wood in a few hours. In all cases stained wood must be darker than the natural colour, for a dark surface will show through a lighter stain.



1. How to varnish wood

Stains for wood are sold ready for use in small bottles by all dealers. They may be put on with a brush, or rubbed in with a rag. The neater way is to use a brush. Generally two coats are given. With only one coat it is not easy to keep the same shade of colour all over, for any overlap with the brush in applying the first coat shows darker than parts over which the brush has passed only once. In succeeding coats this becomes less and less noticeable, so that the best result can be obtained by using weak stain and applying a number of coats, allowing each to dry before putting on the next. The surface must be smoothed with sandpaper before the first coat and after each coat has thoroughly dried. Otherwise it will feel and look rough, for anything which wets the wood causes its surface to roughen as it dries. Varnish stains are often used instead of simple stain. These are varnish and stain combined, and save the trouble of staining and varnishing separately. If done separately the wood must be stained before it is varnished.

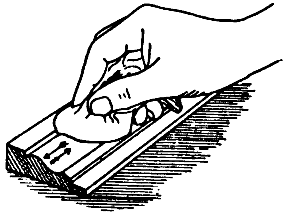
VARNISH. Varnish does not conceal the character of the wood beneath it, for it is almost transparent unless something is added to colour it. It simply produces, when dry, a hard, glossy film on the surface, which protects the wood from dampness and dirt. Quick-drying varnish consists of shellac dissolved in methylated spirit. The spirit evaporates and leaves a thin layer of shellac on the wood. Shellac varnish is used only for indoor work. In making varnish for work exposed to the weather it is necessary to use linseed oil instead of spirit, and copal, mastic, amber, or dammar in place of shellac. Varnish may be used either on the bare wood or on paint.

Varnish is applied with a brush. Two or three coats are put on, each being allowed to dry and then smoothed with fine glasspaper before applying the next. For large surfaces a large brush should be used, so that the varnish can be spread quickly. For small work a small brush is better. The varnish should be put on uniformly, so that some parts shall not be more thickly coated than others. Varnish should not be allowed to run over edges or corners of the article being varnished, and the brush should be used so that it does not leave marks of its own all over the work. The best way is to take one surface at a time and cover it with varnish as quickly as possible—that is, if ordinary shellac varnish, which dries quickly, is being used. The brush should be held as shown in picture 1, and should move in line with the grain of the wood. If it is used across the grain, marks of the brush will show more distinctly. To prevent varnish from getting squeezed out of the brush and running over the edges of the wood, the brush should always move outwards to the edges, as indicated by the arrows in picture 1. In approaching the ends of the wood it goes directly to the edges, but in passing along the sides its direction is only very slightly diagonal towards the edges there, so that the movement shall be as nearly as possible in line with the grain. Spirit varnish dries in a few minutes, but to obtain the best results each coat should be allowed several hours to harden before sandpapering it down for the next. After the first coat, old sandpaper worn smooth should be used, and the work is not rubbed down at all after the final coat. Sandpaper should always be rubbed in line with the grain of the wood. If rubbed across, it scratches the surface too much.

POLISH. The difference between polishing and varnishing is chiefly in the method of application, for shellac varnish and polish are practically the same thing.

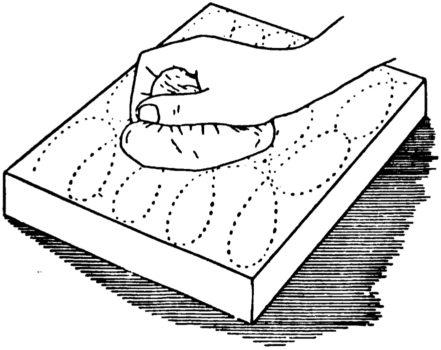
The distinction between varnishing and polishing is that varnishing is done with a *brush*, and polishing with a *rag*. Polishing requires more skill and time, but it gives a smoother and glossier surface than varnishing. It is important in polishing that the pores of the wood shall first be thoroughly filled, so that the polish cannot sink in and lose its lustre. A number of applications of polish with long intervals for drying will do this, but it is quicker and cheaper to fill the pores with some other substance before beginning to polish. The filler is generally whiting or plaster of Paris dissolved in water, turpentine, or oil, and coloured to match the wood. It is rubbed in and allowed to dry, and then the surface is sandpapered smoothly. The wood is now ready to receive the first application of polish.

The rag used in polishing is called a *rubber*. It should be a piece of soft white linen. This is used as an outer covering to a pad of cotton-wool.

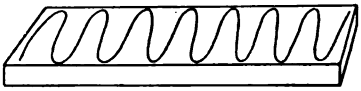


2. Polishing

The cotton-wool is moistened with polish, and the single thickness of rag encloses it and is drawn up like a pudding-cloth at the top and grasped by the hand while it is used. Picture 2 shows a small rubber held in this way by the thumb and fingers only. Picture 3 shows a larger one. The pressure on the rubber should not be heavy, and a few drops of linseed oil are put on the rag to make it move about freely without tendency to stick. The polish is put on the cotton-wool only, and gets squeezed through the rag in rubbing. The method of rubbing depends to some extent on the shape and size of the work. First, it is necessary to cover the surface of the wood with polish as quickly as possible. This is done by moving the rubber in large sweeps either with or across the grain, or both. The direction is not important as long as the polish is rubbed uniformly all over the surface. On a moulding, as in picture 2, the movement would be entirely backward and forward lengthwise. On a large flat surface, as in picture 3, the rubber may be moved in curves or spirals, as shown by the dotted lines. These are only drawn as lines, but the broad surface of the rubber would, in following them, polish the entire area of the wood. On a long surface of moderate width the first movements of the rubber might be as shown in picture 4. For getting into the corners of panels and similar parts the rubber must be squeezed into a pointed form which will reach those parts. After the polish has been applied in this manner, the work must be laid aside for at least a day. Then a second application is given in the same way as the first. In the best work this process is repeated a third time or even a fourth, and long periods are allowed between each to allow the polish to sink in as much as it will. In sinking in, and hardening, it loses some of its gloss, and as long as this occurs the work can be improved by fresh applications of polish. This is called *bodying in*. The final process in polishing is called *spiriting off*. In spiriting off, the rubber is moistened with wood alcohol instead of polish, and is rubbed lightly over the surface to remove smears caused by the rubber in bodying in, and also to take up the oil, which, when present, gives the surface a dull, greasy appearance. The last movements of the rubber should follow the grain of the wood—that is, the rubber should move in straight lines with the grain, and not across or in curves.



3. Polishing a larger surface



4. Polishing a long surface

LACQUER. This is used chiefly for coating polished metal to prevent rust. It is more generally used on brass than on any other metal. Brass does not rust, but soon turns dark and dull if unprotected by lacquer. Before applying lacquer the surface of the metal should be made as bright as possible. When the surface is not bright it is because it has a lot of little depressions and lumps, too small to be seen, but their effect is to refract the light in many different directions. When a surface is absolutely smooth all its parts receive and reflect the light in the same direction, and a shiny appearance is the result. This shiny appearance can be preserved for a long time by protecting the metal with lacquer. In time the lacquer wears off from the parts of an article that are constantly handled, or in the course of years it becomes pitted and cracked by the action of the air, which eventually gets at the metal beneath. Until this happens the metal remains as bright as when the lacquer was put on. Lacquer is sold in small bottles and is applied with a camelhair brush. It may be obtained either colourless or coloured. It is sold in all the primary colours, and these can be varied by mixing. The remarks about the use of the brush in varnishing apply to lacquering also, but in lacquering extra care must be taken to put it on free from dust and air-bubbles, for these allow the air to get at the metal.

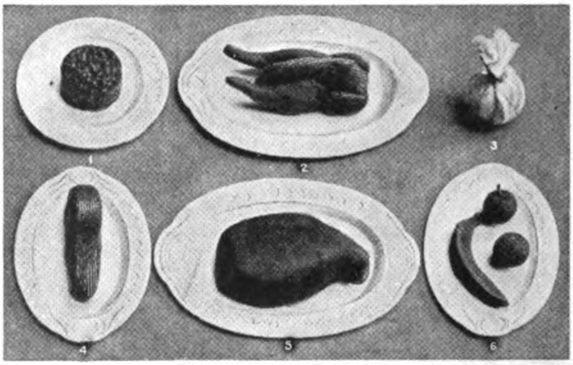
Lacquering is simpler now than it used to be when heating the metal was a necessary part of the process. Formerly the lacquers used were practically the same as the varnish used on wood, but they are now of a metallic character and better adapted for their purpose.

FILLING A DOLL'S CHRISTMAS HAMPER

WHAT are the things we should like to pack in the Christmas hamper which we learned how to make on page 2131, if only we could get them small enough to go in? It would be delightful to be able to put in a tiny turkey, and a brown ham, also a Christmas cake, a plum-pudding, and last, but not least, some fruit—some beautiful golden oranges from Florida or California, bananas from the West Indies, and some fine Oregon apples.

However, as we cannot get all these delightful things by wishing for them, the next best thing is to try to make them ourselves. But how can we?

There is a delightfully simple way of doing this. From a piece of clay which we can buy from any dealer in artists' materials, we can model our things, and afterwards paint them the exact shades to represent the various articles. If we cannot get this clay we need not despair, for we can make our own modelling material from flour and water, which we must mix into a stiff dough and knead until it is quite firm and clean, and does not stick to our hands. If we use clay, there are just one or two things which we must remember. The more clay is handled and worked the more plastic it becomes. Fresh clay easily breaks, and cannot be modelled so well or worked with the same freedom as well-used clay. Clay that is kept in good condition will not stick to our fingers, and we shall find it a clean and pleasant material to work with.



The things for the hamper

If our clay should become hard and dry, we must break it up into little pieces, sprinkle it slightly with water, and wrap up in a wet cloth until it becomes soft again.

Whenever we have done using our clay and wish to put it away for a time, if we are wise we shall wrap it in a wet cloth squeezed (not wrung) out of cold water.

When we have obtained our clay or dough for the modelling of our articles, an old slate and our box of paints are the only other things required.

We must be careful to make all the things in proportionate sizes: they would not look at all real if we made an orange as big as a turkey! We must take a piece of clay as large as a big walnut for the boiled ham, a piece rather smaller for the turkey, one half the size for our plum-pudding and Christmas cake, and several pieces as large as big peas for the oranges, apples, and bananas.

First we will make the orange, because it is the simplest of them all. Just at this point it will be as well to remember that the things made of clay will dry and harden ready for painting if left for a few hours on the slate, but if made of dough they must be put into a cool oven or before the fire until they become quite hard.

When we try to model the various things, we shall be astonished to find how little we really know about them, so it will be well to have a real orange, apple, or banana to work from. To form an orange we must work the piece of clay between our finger and thumb until it assumes a perfectly round shape, very, very slightly flattened on one side. Prick it all over with the point of a wool needle which has a round or blunt point, to represent the pores found in the skin of an orange. When it is dry paint it with *Chrome Orange*.

To make our apple we proceed in exactly the same way, but we must slightly flatten the ball at top and bottom, and with a pointed match-stalk hollow out a tiny groove round the eye and another at the base, where we insert a tiny twig to represent the stalk.

Touch the eye of the apple with black paint, and paint all the rest of the apple green, using *Olive Green* with a touch of pale *Chrome Yellow*, or, for a red-cheeked apple, give a touch of *Crimson Lake* on one side, gradually merged into the green.

To make the pudding, we take a piece of clay as large as a nutmeg and make it round like a marble. Cut a small square of white muslin and tie it up while it is still soft. Finally, we must give the cloth a few dabs of brown paint to represent stains from the pudding inside it.

Our Christmas cake requires the same amount of clay as the pudding. Roll it into a ball, press out cylinder shape, and flatten one end on the slate. With a pointed match-stalk make the top rough to give it the appearance of a plum-cake. Then paint it a good brown, using *Vandyke Brown* paint and *Chrome Orange* in equal proportions. Afterwards give tiny black dots all over to represent currants.

A fine banana is formed from a little cylinder of clay. Press three pointed edges up along the cylinder, curve it slightly and bring one end to a point. To colour the banana, use pale *Chrome Yellow* with little touches of brown here and there, as in a real banana that is quite ripe.

We must shape our ham from a piece of clay the size of a large walnut by first making a ball, which we gradually press on the slate to flatten the under side. At the same time we must nicely curve the upper side with the fingers and draw out the bone at the end. As our ham is supposed to be ready cooked and glazed for the table, we must paint it a rich brown, using *Brown Madder* paint for the purpose.

An excellent tongue is formed from a piece of clay a third of the size of the ham, shaped as in the picture on page 2258, and coloured the same shade as the ham.

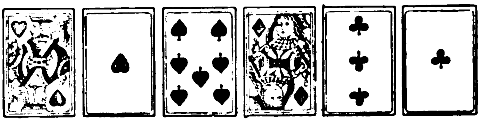
Last comes the turkey, made from a piece of clay about the size of a small walnut, from which, first of all, we model two small legs as in picture 2, and two little flat pieces for the wings. The rest of the clay we roll into the shape of a cylinder; we must flatten one side, and with our fingers draw up the top to represent the breast-bone of the bird. Press the legs and wings into place as in picture 2, and finally we must paint the whole a pale brown, using *Chrome Orange* with a dash of *Vandyke Brown* paint. Last, but not by any means the least, we wrap up daintily each article in a square of white tissue-paper or cotton-wool, remembering that the common things of life may always be made more beautiful with the exercise of a little care and taste in their arrangement.

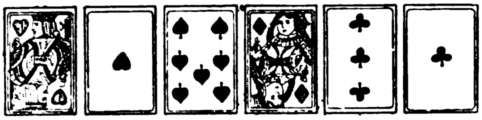
If we pack our hamper properly, the things will travel safely to their destination. We must place our ham at the bottom, as it is by far the heaviest article; after that the turkey and tongue side by side, putting little pads of cotton-wool in the hollow places, so that the legs of the turkey do not get broken. Above these come the pudding and the cake, and finally the fruit, of which we must make sufficient to fill up all the empty space, and our little Christmas hamper is complete.

The little friend who receives the hamper will be able to dish up the various articles on the tiny dishes of a doll's tea or dinner service, and have delightful times playing at dolls' parties, shops, and restaurants.

THOUGHT-READING BY CARDS

This is a trick that needs the assistance of an accomplice. Some cards—six, or nine, or twelve, or as many as you like—are spread out, face upwards, on a table. The thought-reader goes out of the room, and the accomplice, or stage manager, as we shall call him, says: "Will anyone please pick up a card, any card, and hand it to me?"

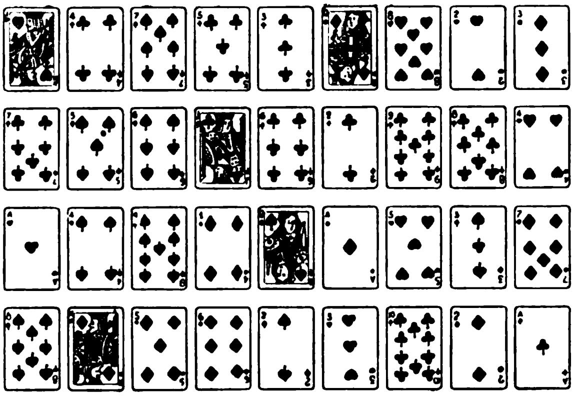

1. A row of cards before touching


2. The same row of cards after being touched

Someone does so, and the stage manager puts it down again in the same place. The thought-reader comes into the room, and by merely looking at the cards he knows which card has been lifted and replaced. But he need not say so right away. He can go up to any one of the company, and after saying "Think of the name of the card that has been touched," he holds his or her hands or head and then says what card it was.

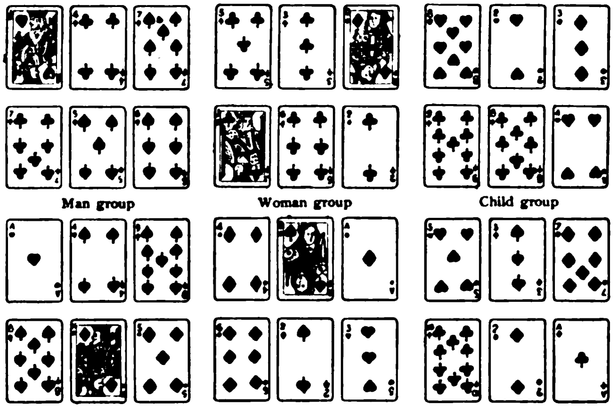
How does he know? Easily enough. The cards must be of the kind that have a line round each, outside the spots or picture. Many cards are of this variety. They are always cut so as to leave a wider margin at one end than at the other. As the cards are spread out on the table in the first instance, all the broad margins are put facing one way. When the accomplice replaces the card, he puts it back with the narrow margin at the end where the broad margin was before, and the conjurer sees by merely looking at them which card has been taken and put back. Picture 1 shows a number of cards as they would be before being touched, and picture 2 shows the same cards after the conjurer comes into the room. It is plain that the three of clubs is the selected card. This trick is impressive because the accomplice says not a word and makes not a sign. Indeed, he may be sent out of the room or behind a screen before the conjurer comes into the room.

Another thought-reading card trick is very clever and very puzzling. Thirty-six cards are used, and again there is both a conjurer and an accomplice. The cards are spread out in four rows, with nine cards in each row, as seen in picture 3. The conjurer goes out of the room and one of the company touches a card. Then when he comes back the accomplice says a sentence, perhaps something like this: "Uncle

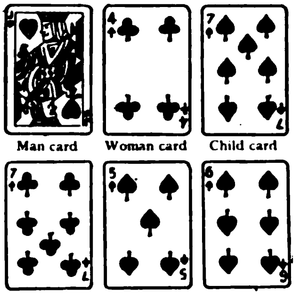

3. Thought-reading with thirty-six cards

William likes green peas," or "Little Mary Smith lost her needle." These words indicate what card has been touched. This is a trick that may be repeated as often as you like; the more often it is done the more puzzling it becomes, and it is practically impossible to find the key for it.

What is the key or secret code used by the performers? They must suppose that the cards are divided into six groups of six cards in each group as indicated in picture 4. Then the names of the groups take the following order—man, woman, child, animal, vegetable, mineral. Picture 4 indicates the order of the groups. Then it is supposed that each group is divided in the same way, so that in each group there is a man card, a woman card, a child card, an animal card, a vegetable card, and a mineral card. Picture 5 indicates the names of the cards in each group. The sentence spoken by the accomplice must contain two nouns, the first noun indicating the group and the second noun indicating the card in the group. Thus "Uncle William likes green peas" means man group, vegetable card, so that the card is the second from the left hand in the second row from the back. "Little Mary Smith lost her needle" means child group and mineral card, so that in this case the card touched was the card at the extreme right of the second row from the back. "Our donkey loves baby" means animal group and child card, so that the card this time is the one third from the left of the second row from the front. Very little practice will give skill in this trick, which is one of the best for evening parties, as people ask for it to be repeated again and again, hoping that they may at last be so clever as to find out the secret.



4. Division of the cards into groups



5. Division of a group

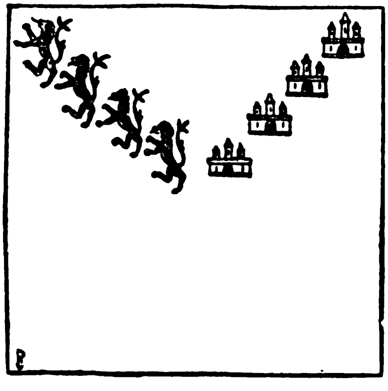
HOW THE MILLER ARRANGED THE SACKS

On page 2139 is the problem of the miller and the sacks. This is the answer to it.

The way to arrange the sacks is as follows: 2, 78, 156, 39, 4. Here each pair when multiplied by its single neighbour makes the number in the middle, and only five of the sacks need be moved. There are only three other ways in which the sacks could have been rearranged; but any one of these would have demanded that more than five sacks should be moved.

THE PUZZLE OF THE WEAVER & THE CLOTH

A weaver had a piece of cloth which was embroidered in a very peculiar fashion with four lions and four castles, as shown in the picture. The four castles run from near the centre to the top right-hand corner, and the four lions run from near the centre to the top left-hand corner.



The task the weaver set his friends to do was to show how the cloth could be cut into four pieces, each piece being equal in size and shape, and each piece having a castle and a lion upon it. This seems a very difficult, perhaps an impossible, thing to do; but Mr. Henry E. Dudeney, in his "Canterbury Puzzles," shows how it may be done.

Remember that each piece must be equal in both size and shape, and each piece must have upon it both a lion and a castle, so that the four pieces are exactly alike. The solution of this problem requires patience and thought, but it is well worth the time and labour expended on it, and we shall feel quite proud of ourselves when we have found out the right way to cut the cloth.

THE NEXT THINGS TO MAKE AND THINGS TO DO ARE ON PAGE 2349

PRISCILLA

A ROUGH log dwelling stood by itself on the hillside, apart from the village of Plymouth. The afternoon sunlight that made its way through the oiled paper panes of its western window lit up the single room of its interior with a mist of dancing sunbeams and glorified the unadorned ruggedness of its armour-hung walls and the close-beaten earth floor. It drifted across the pages of the open book of a man who sat reading in the corner, and lingered caressingly on the bent, golden head of a youth absorbedly engaged at the pine table underneath the window, splashing brightly upon the paper on which he was writing. The man in the corner impatiently shifted his chair out of the sunshine, but the scribe did not move, for he was writing a letter to a friend home in England — a letter full of the name of a Puritan maiden. No sound broke the silence, save the occasional rustle of turning pages, and the scrape, scrape of the hurrying pen.

Once or twice the man in the corner glanced at the youth. At last he closed his book with a ponderous bang.

" John Alden," he announced abruptly, " When thou hast finished thy work, I have somewhat to say to thee."

" Speak, master. I have finished," said the young man, folding the last sheet of his letter.

The other paused a moment in embarrassment to pick his words. He crossed the room and, taking a pipe down from the shelf, filled it and lit it, and cleared his throat.

" The Scriptures say, lad, that it is not good for a man to be alone," he began at last, " and I have been thinking somewhat — of — of wooing the damsel Priscilla. I tell thee, boy, I have thought on it often, but being a coward with women — I am going to ask thee to woo her for me."

In the silence that followed his words, John Alden stared out through the open doorway over the mist-hung meadows to the steely line of the ocean. How cold and gray everything had suddenly become.

" I — I woo her — " stammered the youth. " Nay, master — "

" And why not, thou silly fellow? 'Twill be rare practice for thee against thine own wooing."

" But — such a message — I would mangle it sorely — Besides," he added, with forced lightness, " as thou often sayest, Captain Standish, if thou wouldst have a thing well done, thou must do it thyself and not leave it to others "

" In troth the maxim is a good enough one, but I was never a maker of phrases. I can march up to a fortress and summon it to surrender, but — to march up to a woman with such a proposal — " The Captain shrugged whimsically. Then he leaned forward and clapped his brown hand down upon Alden's shoulder.

" Surely, lad, thou canst not refuse what I ask thee in the name of our friendship."

For a few minutes Alden did not reply. Then his hand sought that of the Captain's.

" Nay, master," the young man's voice was husky in his effort to keep it from shaking, " since thou askest me so — I cannot deny thee."

Through the gathering mists of the evening, John Alden went on his errand. Through the pines he could hear the dull beat of the wintry sea on the shore — not more cold and dead than his own hopes that had been so warm and bright but an hour ago. As he drew near the house of Priscilla, a sweet, fresh voice singing the hundredth Psalm floated out to him on the damp air. His face lighted up suddenly. On tiptoe he crept up to the door and lifted the latch. The picture that he had anticipated lay before his eyes — the great

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fireplace with its blazing logs lit the room and on one side of the hearth sat Priscilla, feeding a hurrying spindle from the carded wool that lay piled like a snow-drift on the lap of her gray gown. The leaping flames cast a rosy glow upon the white, flying hands and the warm, vivacious face, framed in its demure Puritan cap. Suddenly the spinning and the song came to an abrupt stop.

"John!" cried Priscilla, glowing, "Where didst thou come from? Methought thou wast a ghost standing there so still and solemn in that shadow."

With a mischievous burst of musical laughter she turned back to her spindle, which required such earnest care for the next few minutes that she could not see the guest who was standing there, waiting in awkward eagerness for a more hospitable welcome. Presently Priscilla cast a teasing glance over her shoulder.

"I was thinking of thee when I was singing just now."

"Of me —" John took a step forward.

"Yea, of thee and of many things," added Priscilla hastily. "I have been thinking all day long of Old England, of the hedgerows, and the primroses and the haycocks." The vivid face clouded. "I — I fear I was homesick. Since father and mother and Joseph died, I sometimes feel very wretched — and — and lonely —" She broke off with a little choke and bent over her spinning.

"Lonely — Priscilla —"

Then John remembered his errand.

"Priscilla —" he blurted out, "I — I — have been sent to thee with a proffer of marriage."

The fine thread of the spindle broke with a sudden snap.

"Thou — hast — been sent? Who sent thee?"

The hot blood dyed the girl's delicate throat and face as she carefully bent over the spindle, mending the broken thread. Before that blush it was only the memory of his friend's hand on his shoulder — the hand of a man who trusted him — that kept Alden true to his promise.

"It was Captain Myles Standish, the bravest man in all of Plymouth. Thou saidst just agone that thou wast lonely," the young man paused a moment to steady his voice, and then resumed, "Thou art a woman — and young — and thou needst someone who is strong and brave to protect thee. Let me take a favourable answer back to the Captain. In all the world thou wilt never find a man who is braver, aye, or more gentle than he is."

Priscilla glanced at him sidewise. Her eyes were twinkling roguishly now.

"Yes, John, go on."

"Thou knowest the Captain thyself, Priscilla, but perchance thou didst not know that he cometh of noble lineage."

"Did he bid thee say this to me?"

"Among his ancestors are men of heroic deeds who have carried the name of Standish in the forefront of battle, but among them all, Priscilla, there has never been a finer, braver or nobler man than he who hath asked thee to be his wife."

"Hast done, Master Envoy?"

"Aye, Priscilla, but —"

"But me no buts, good John," quoth Priscilla. "Prithee, may I inquire, if the great Captain's so very eager to wed me, why doesn't he take the trouble to come himself, and woo me? Methinks, if I'm worth the winning, I'm worth the wooing."

"Worth the wooing —! Priscilla!"

Before the lad's earnest eyes the teasing look on the girl's face softened and changed.

"Then — then — why dost thou not — speak for thyself, John?" she mocked tremulously.

Then like a flash she was gone, across the room, and up the clumsy stairs that led to her nook in the cabin loft.

Hopelessly bewildered, John Alden rushed into the open air. He hurried to the seashore and snatching the heavy, sugar-loaf hat from his head bared his curls to the damp east wind that swept in from the ocean.

"Am I to blame?" he exulted. "Am I to blame if she likes me the best?"

For hours he wandered up and down. The evening closed in about him; the ocean tossed and moaned upon the sands; the spray from the hissing waves rimed his hair and lips with salty drops and drenched his homespun

PRISCILLA AND JOHN ALDEN

Here we see Priscilla and John Alden standing on the seashore of Plymouth. Note their quaint Puritan garb and the Mayflowers gathered in the girl's lap. Beyond them stretches the great Atlantic Ocean, over which they have come many weary miles to this new land to build up homes for themselves in the wilderness.

clothes,—but still he wandered, up and down, up and down, tossed like the waves between conflicting emotions. On one side of him lay his love, and on the other an old and tried friendship and the loyalty of man to man. And he must choose between them. At last his decision was reached. He flung up his fair, young head bravely.

"I cannot be a Judas," he told the wind and the sky.

With his high resolution still warm in his heart, he hurried home through the night. He found the Captain reading and puffing away at his pipe.

"What ho, Master Envoy?" inquired the Captain, with a show of great cheerfulness, "Thou hast been a long time on thy errand. Come, sit down and tell me all that has happened."

In his straightforward, boyish way, withholding none of the truth, Alden related all that had taken place. As he proceeded in his recital the Captain puffed more and more fiercely at his pipe, and when he came to the words "Why dost thou not speak for thyself, John," Myles Standish jumped to his feet, red hot in an instant.

"And this is the way thou doest thy errand? Marry come up, thou art indeed a friend most worthy of the name! John Alden! thou hast betrayed me! Thenceforward there shall be nothing between us but war and implacable hatred!"

Stung to the quick by the Captain's injustice, Alden opened his lips to reply none too meekly, when a boy came rushing up the hill.

"Please, Captain," he panted, "the governor desires that thou shalt come in haste to a sudden council! The Indians have come in and methinks —"

The Captain turned on the boy furiously, glad to have someone on whom to vent his wrath.

"Who in Beelzebub's name cares what thou thinkest?" he roared. "Get thee gone, or I'll box thy malapert ears."

And without another word or look at John Alden, the Captain strode off down the hill, driving the boy before him.

For hours Alden lay awake, turning and tossing about on his rude bed. About midnight, Standish came back from the council. Before he lay down he came over and stood by John Alden for a few minutes in silence. Then he extinguished the candle.

"I will not wake thee, lad," he muttered. "Marry, what is the use of more talking?"

In the early morning twilight, Alden saw him get up and put on his armour, and, taking his musket from the corner, stride out of the cabin. The young man's first impulse was to call him back, but the memory of the insult of the evening before still burned hot in his heart, and his pride held him back. And so the Captain went forth to danger, perhaps to death, without a word from his friend.

When Alden went into the village all were talking of the council.

"Didst hear, John?" a neighbour inquired. "They say an Indian came to the council yesternight with a snake skin full of arrows as a challenge to war, and in reply our doughty Captain stuffed the serpent's hide full of powder and bullets and sent it back post haste. To-day he has marched out upon the savages with his men — as thou no doubt knowest. In troth, there is no one so brave and so ready as our Captain, though he be but a little man!"

Week after week passed away, and Myles Standish did not return, though word came now and again of his battles with the red men.

In the meantime John Alden was building himself a new dwelling. Day after day he laboured upon it; and often in the evening, when his work was done, he would find his way through the forest to the house of Priscilla. Many were the things they talked of, but love was never mentioned between them. Loyalty to his friend firmly sealed Alden's lips on the subject that was nearest his heart and oftenest in his thoughts.

One afternoon late in the autumn Priscilla sat at her wheel as usual, spinning and singing away as merrily as a bird — the sunlight gleaming brightly over her busy fingers and the white, flying floss on the spindle, — and so John Alden found her.

"Truly, Priscilla," he said in shy admiration, "thou remindest me of Bertha, the beautiful spinner, of whom I once read in a book at a stall in Southampton. She was so thrifty and good that her name passed into a proverb."

"Come up, thou silly John," laughed Priscilla, "if I am a pattern for housewives, thou must show thyself a model for husbands. Hold this skein on thy hands — thus! while I unwind it for my knitting. In sooth it is not good for men to be idle."

Blushing and awkward as a schoolboy, John took the skein on his bronzed hands, while Priscilla, standing slimly erect before him, unwound the thread from his fingers.

"Lo and behold, what a clumsy oaf thou art," her merry laugh took away all sting from the words, "There, hold thou thy hands so — and so — Marry come up! Thou hast gotten the skein all in a tangle!"

Tingling and dumb with delight, the big fellow watched the girl's dark, vivacious face, as, with red lips pursed up in mock seriousness, she bent over the task of untangling the knots he had unwittingly made. Suddenly in the midst of this scene they heard the sound of running feet, and a boy burst through the door and rushed panting into the room.

"The Captain! The great Captain is dead!" he gasped.

John Alden dropped the skein with an exclamation, all unmindful of the damage he was doing, and, seizing the boy by his shoulders, shook him until his teeth chattered.

"Thou liest!" he cried harshly. "Tell me that thou liest, thou marplot!"

"Nay — nay —" whimpered the boy between the shakes, "I tell thee — the sober — truth! Take thy hands off me!"

Alden released the boy and pushed him into a chair.

"There, lad, I meant not to hurt thee. Tell me how it happened."

"He — was beguiled into — an ambush and slain by an Indian with a poisoned barb. And now we shall all be killed by the savages! If thou dost not believe me, thou canst go down and hear thyself in the village!" The boy sniffed at the thought of his undeserved chastisement, and drew a dirty sleeve across his face.

"Beguiled into an ambush and killed!" groaned John Alden, and he buried his face in his arms on the rough, board table.

With a stealthy look at the bowed head, the boy slipped out of the room. He was not going to run the risk of another shaking.

Suddenly John heard the sound of a little, choked sob. He was on his feet in an instant, — both arms out, for stingingly sweet through his pain had come the thought of his freedom.

"Priscilla — little girl," he said, brokenly, "Don't cry! Thou art mine now, my very own. I will take care of thee!"

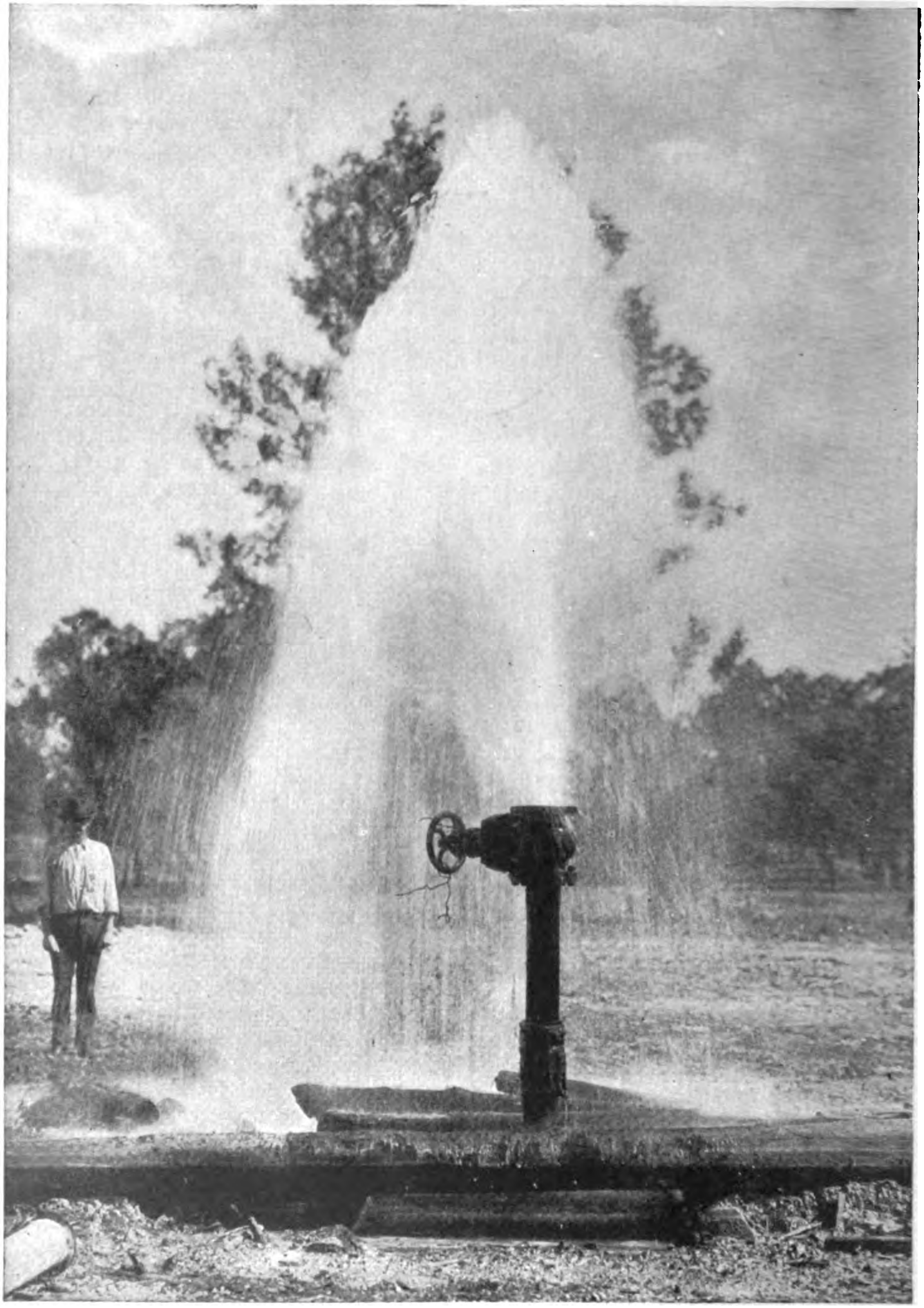
And Priscilla, tearful and shaken, — all her sauciness gone before the sudden, horrible tidings, — went home straight into his comforting arms.

One scene more we shall see in the life of Priscilla before we take leave of the Puritan maiden.

It is a beautiful morning, cold and clear. All the village of Plymouth is gathering in the little meeting house on the hill, for it is the wedding day of John and Priscilla. Presently there come the bride and the bridegroom, — John, tall and straight and broad-shouldered, and fair like a young Saxon god; and Priscilla, all blushing and sparkling in her wonderful, vivid, dark beauty. The wedding is simple and brief, like that of Ruth and of Boaz. Softly the two repeat the words of the service, taking each other for husband and wife. When the service is over an armour-clad form suddenly appears in the doorway. The bridegroom starts back and the bride hides her face on his shoulder. Into the room there marches the Captain, Myles Standish, and grasping John's hand, he thumps him as old on the back.

"John," he exclaims heartily, "John, I've come back just in time to give thee my blessing, for I was not killed as they said in that skirmish, but did my share of the slaying!"

HOW AN UNDERGROUND LAKE IS TAPPED



This is the famous Dolgelly bore, or well, in the Moree district of New South Wales, which discharges thousands of gallons of water a day. When a deep boring is made in a valley, so as to reach water which has trickled underground down a sloping bed of rock from the hills in the distance, it is called an artesian well, because the first well of this kind was sunk at Artois, in France, in 1126. When the water is reached it rises in the bore and comes out at the top like a fountain. As we know, water must find its own level, and so the height of the fountain depends upon how far up the sloping hills the underground water reaches.

FRANCE IN THE REVOLUTION

CONTINUED FROM 2072

When we visit Paris now one of the first sights we wish to see is really not in Paris at all, but eleven miles north-west from the city. For although Paris is full of splendid buildings, palaces, museums, and churches, there is nothing quite so fine in the beautiful city itself as the magnificent and historic Palace of Versailles, which was built, enlarged, and kept up, at an enormous cost, by Louis XIV., the Grand Monarch, who reigned for a whole "age," Louis XV., his great-grandson, and Louis XVI., of the Revolution.

Let us now imagine ourselves there after the short journey of eleven miles by tram or train from Paris, and make our way first to a room called the Salle de l'Œil de Bœuf, or the Ox-eye Room, from its oval window, the shape of the eye of an ox.

Here, under the rich gildings and glaring paintings, the courtiers in silks and laces were kept hanging round in idleness and vanity to see King Louis XV. rise and put on his finery. Close by is the room in which the bad old king lay down to rise no more. The courtiers were near by when he died, waiting for the last breath; and then suddenly there came a sound of scuffling and hurry through the fine rooms and across the courtyard as they all rushed in a body to the distant rooms of the king's grandson, who now had become Louis XVI., and his wife, Queen Marie Antoinette. A bystander tells us that the young couple, overcome with their feelings, fell on their knees together, and, with streaming tears, exclaimed: "Oh, God, guide us, protect us! We are too young to reign!" Louis was only twenty, and he and his girl-wife had spent their days amusing themselves, as did the rest of their world, caring nothing about the misery of the great masses of the people spread over the wide face of France, who had sunk into a state of poverty and wretchedness never equalled in the world's history.

It is difficult for us who live in happier days to understand the greatness of that misery. There were thousands of poor creatures, not only untaught and uncared for, but worse housed and worse fed than the very pigs. They were forced to work for their lords of the manor without pay, and had no redress when the grand folks hunted over their little patches of crops and spoiled them. If any dared to complain of all the injustice and hardships, they were silenced by the hunting-whip and the dungeon, even the gallows. There are terrible stories of the wretchedness of those days, of women and children lying dead in the fields, the grass that they had tried to eat still in their mouths.

At the beginning of his reign, Louis XVI. had wise Ministers, who tried to get the money affairs of the kingdom into order and to arrange that the burden of the taxes should fall on those most able to pay them. But the queen did not like economy, and the nobles hated that their old "rights"—which were the people's "wrongs"—should be interfered with; and timid Louis gave up his good intentions. All the time the rumblings of the coming storm, so long threatening, grew ever louder.

HOW THE KINGS AND NOBLES FEASTED WHILE THE PEOPLE STARVED

There is a story of Nero, one of the worst of the bad Roman emperors, fiddling while his splendid city of Rome was burning. Turn to Versailles, and you will see Louis spending his days in hunting, or working with a blacksmith making locks. Some of these, and his tools, are still to be seen in the Palace Museum. And the queen? You will find her in the park, perhaps, dressed up as a shepherdess, driving a flock of white sheep with ribbons round their necks, or playing at being a dairymaid in a little thatched farm. And all the time as they trifled, as the nobles danced and feasted, their beautiful land of France was perishing from neglect and starvation.

We have seen, on page 1246, how the French lost Canada, and how their vision of an immense continental empire across the ocean faded away as English colonies strengthened. When the American colonies could no longer bear the yoke of the Mother Country, France sent generous help to them in the struggle. When it was over, the French soldiers came home full of zeal for the truths contained in the Declaration of American Independence, feeling perhaps most deeply of all the words, "All men are born equal."

THE NATIONAL ASSEMBLY WHICH DECIDED THAT SOMETHING SHOULD BE DONE

And so, to the influence of the words of the great writers and thinkers of the day was added that of the returned volunteers, who had seen with their own eyes what it meant to be free and equal and brotherly in a country where there were no nobles, no Royalties.

Then France had to find money to pay for their share of the war which had won independence for the States. No more could be borrowed or squeezed from the unhappy taxpayers, and at last Louis was obliged to call together the States-General, as they called the Parliament of France. As this was the first time for nearly two hundred years, six generations of Frenchmen had lived and died dumb as regarded the government of their country. Great was the excitement during the election of the men who were to form the States-General. There were the representatives of the nobles and clergy, called the First and Second Estates; and the men who represented the great mass of the people—the men who worked either with hands or heads—they were the Third Estate. Lists of grievances were drawn up, also of urgently-needed reforms, and even the hopeless roused from their dullness of despair, for something was going to be done at last.

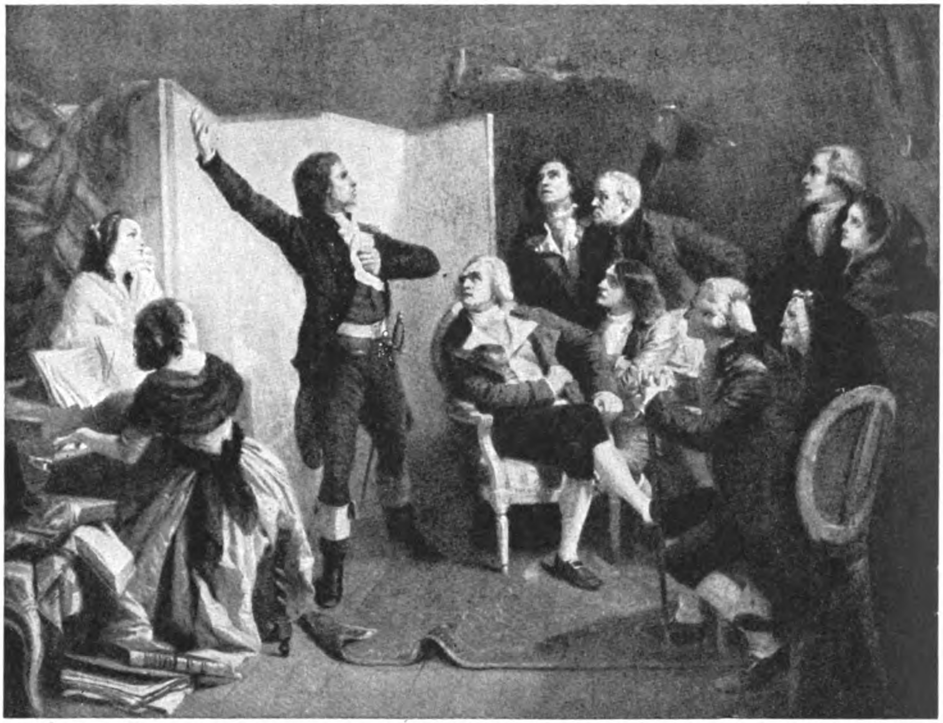
THE BURSTING OF THE STORM AND THE RISING OF THE ANGRY PEOPLE

One of the first things that happened was this. The Third Estate determined that its voice should be heard. Hitherto the custom had been for the representatives of the people to sit and talk and vote by themselves, and no one took any notice of their wishes. Now they demanded that they should sit and debate with the other Estates, and have an equal power in voting with them; and they had their way. The three Estates formed the National Assembly, and the chief wish of the people just then was that the king should govern according to certain laws, not by his own will alone; also that all should have a voice in the government.

Louis and his queen and Court were terrified at the power thus seized by the Assembly, for the vain boast of Louis XIV., "I am the State," was now turned by the voice of the people into the declaration, "We are the State," and the timid and foolish king sent away the adviser whom the people most liked and trusted, and summoned German and Swiss troops to Paris and Versailles to keep the people in order.

And now at last the storm burst; it was the beginning of the Revolution. When the crowds in Paris heard the news, and rumours spread that the commander of the Bastille had orders to fire on the people, they became

THE SINGING OF THE REVOLUTION SONG



Nothing roused more enthusiasm for the French Revolution than a song written in a single night by an officer named Rouget de Lisle, who is here singing the song to his friends. It was sung by the men of Marseilles as they marched to Paris, and the people called it "The Marseillaise." It has ever since been the National Anthem of France.

When the starving crowds of Paris could no longer be restrained, they marched through the rain to Versailles, singing and shouting as they went and compelling all whom they met to join them. The artist has shown in this picture a lady of the nobility seized by the crowd and compelled to sing Revolution songs. The crowd broke into the Palace of Versailles and brought back all the Royal Family to Paris.

quite wild with excitement, and rushed through the streets, robbing the bakers' shops, the wine shops, the gun shops; shouting "To arms!" and "Down with the Bastille!" Thousands of people attacked the hated prison for hours, till the governor was forced to give in; he was killed in the streets, and the mob never rested till they had pulled down the thick walls that reminded them of the tyranny of kings.

The people now felt their power, and peasants in the country began to attack the castles and monasteries, so as to burn the deeds and papers by virtue of which their lords held them in such slavery and misery. Can one wonder if cruel deeds were done in revenge for centuries of oppression?

The National Guard that had been formed by the citizens to keep order in Paris was commanded by Lafayette, who had fought beside Washington in America, and they chose a cockade of red, white, and blue. The time came when many in danger of their lives were saved by putting on this tricolour badge and shouting: "Vive la Nation!" "Vive la République!" as we should shout "Long Live the Nation!" "Long Live the Republic!"

HOW THE WOMEN OF PARIS FETCHED BREAD FROM THE KING'S PALACE

The National Assembly at Versailles was talking over plans for reforms, but at last the starving mob in Paris could be no longer held back, and early one October morning thousands of hungry women collected in the market place, crying out for bread. When it was proposed that they should go and demand it of the king at Versailles, they set off to walk in the pouring rain, followed by a great rabble, for twelve weary miles.

Lafayette had the greatest difficulty in keeping any sort of order, and in protecting the king and queen and their children, as the wet and yelling mob burst into the magnificent gilded and painted rooms of the three Louis. They insisted on the king going back to Paris with them. What a procession! Fifty cartloads of the king's grain went first, and pressing before, behind, and round the carriage windows of the Royal Family, thousands of the lowest and roughest sang and yelled and beat drums all the way to the Palace of the Tuileries. "We shall have bread enough now," they shouted. "for we have with us the baker and the baker's wife and boy."

That was the end of the glory of Versailles as a Royal palace; for many years it has been the great national museum of "all the glories of France."

HOW THE KING BETRAYED THE PEOPLE AND WAS FOUND OUT

The National Assembly worked hard to arrange matters so that France should be better governed for the future. The old feudal provinces with their oppressive laws and customs were done away with, and eighty-three departments were formed, and divided into districts, which were to be governed by persons elected by the people themselves. The property of the Church was taken away for the use of the State, and the clergy were to be paid by the Government. All titles were abolished, and the king no longer could make laws or fix taxes, or decide peace and war.

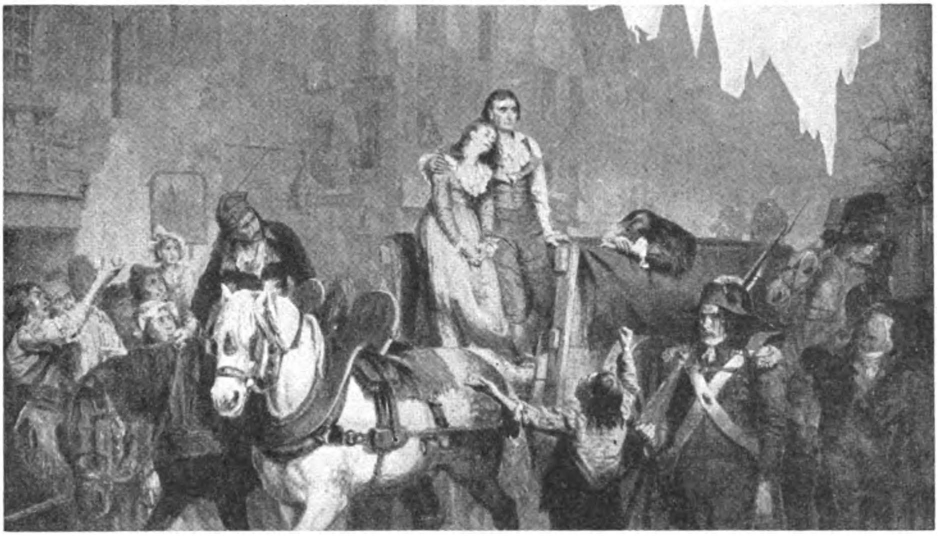
The king agreed to this constitution, but good government could not be all arranged at once; bread was still dear, and people became suspicious of each other, and violence and disorder spread everywhere. Then the king and queen decided to try to escape from France and seek aid from foreign countries, so that Louis could put down all the new arrangements for reform, and make himself absolute king once more.

What beatings of heart must the Royal party have felt in their large new yellow travelling coach when driving away from the Tuileries that summer night through the muddy country, all in the dark! It seemed for some time that all was well, but Louis was recognised, and the carriage had to turn back to Paris. Paris received them in silence, but the excitement was intense, and the news spread over the country that the king had betrayed them, and could no longer be trusted.

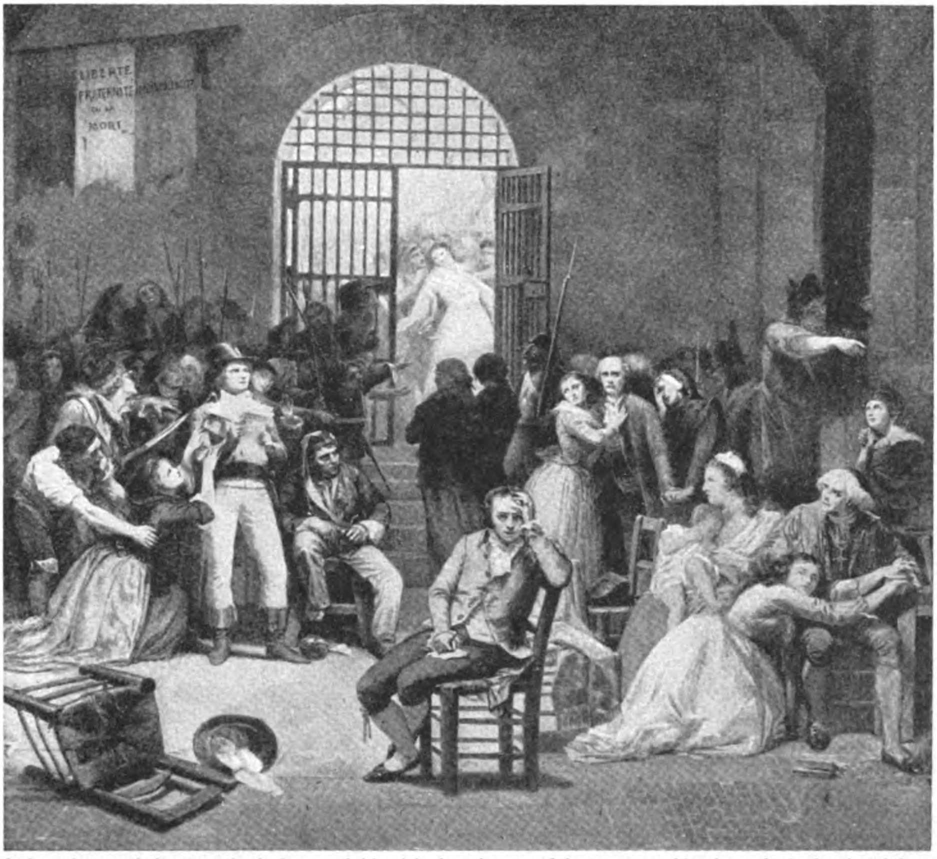
THE RED CAP PROCESSION TO PARIS SINGING THE MARSEILLAISE

When the Garde Nationale was formed in Paris, other towns throughout the kingdom formed similar companies of soldiers, and it was about this time that the Garde of Marseilles, right away in the south; on the shores of the Mediterranean, determined to march to Paris to prevent the king and the

THE REIGN OF TERROR IN FRANCE



During the last fourteen months of the Revolution, scenes like this were witnessed daily in the streets of Paris and other cities. Thousands of innocent victims were taken through the streets in rough carts to the place of execution, there to be beheaded by the guillotine, and as they passed along the crowds jeered and insulted them.



At last the people became tired of so much bloodshed, and some of the more cruel leaders who had ordered these wholesale executions were themselves seized and put to death, and more moderate men took control of affairs. This picture shows some of the last victims of the Terror; the gaoler is reading the list of prisoners doomed to die.

nobles having their own way and undoing the great work of the Revolution.

Try to imagine the heroic march of these patriots, in the hot summer weather, their arms and uniform shabby and dusty, with a banner in front bearing the words: "The Rights of Man." Some wore the red cap of liberty, with tricolour rosettes, some cockaded hats with waving feathers. Branches of trees, stuck in the gun barrels, sheltered the men from the sun. The drums marked step, and they sang as they marched the most inspiriting of all songs—"The Marseillaise"—now the national hymn of France, the words of which, to be found on another page, have often been sung since by armies and vast crowds of people whose blood has been set tingling in their veins. As the men of Marseilles rolled out the words: "Allons, enfants de la Patrie"—"Come, children of our country"—the crowds they passed shouted back in excitement the chorus, as they picked it up: "Aux armes, citoyens!"—"To arms, citizens!"

THE WAY THE PROCESSION CAME TO PARIS, AND THE END OF LOUIS CAPET

Many joined them as they passed on through France, by Avignon, where the Popes once lived during seventy years; by Lyons, now so famous for silk; over hills and dales, across wide plains, and so ever towards Paris, past the wide Rhone, reflecting the red moon, past the nightingales singing in the woods, past the towns and the hovels and the castles, and the men at work on the threshing floors, past the blackberries in the hedges and the little wondering children who sang back to the soldiers: "Allons, enfants de la Patrie." These 600 Marseilles men, who knew how to die, left on July 5. By August 10 they were in Paris, heading the furious attack on the Tuileries. The king and Royal Family escaped to the hall where the Assembly were sitting, but the faithful Swiss Guards were almost all killed, as told on page 1804. It is to their memory that the famous lion at Lucerne, in their native country, has been carved out of the face of the rock.

"Is Louis Capet guilty of conspiring against Liberty? If guilty, what punishment?" were the questions now argued for four days in the Assembly. Capet was the family name of Louis XVI., recalling the line of kings—eight centuries long—descended from Hugh Capet; it was chiefly in consequence of their sins, especially of the last two, that Louis XVI. was found guilty and condemned to death as an enemy of his country. He met his fate with the same calm courage as Charles Stuart had done a century before in England.

HOW A GIRL OF FIFTEEN CAME TO PARIS AND HOW SHE LEFT IT

Not long after, the Widow Capet, as they called poor Marie Antoinette, of whom we read on page 1141, met the same fate. There is a bitter contrast in the way she came to France, and the way she left it. We see a beautiful, high-spirited girl of fifteen leaving her home in Vienna to be married in a distant country. As she passed in pomp and state through sympathetic crowds, her tears flowed—it was hard to say good-bye for always, at fifteen, and she had many brothers and sisters. Little more than twenty years afterwards we see a white-haired, sorrowful woman, with noble courage and dignity, standing in a common cart, her hands tied behind her, passing through yelling and insulting mobs, eager to see her die.

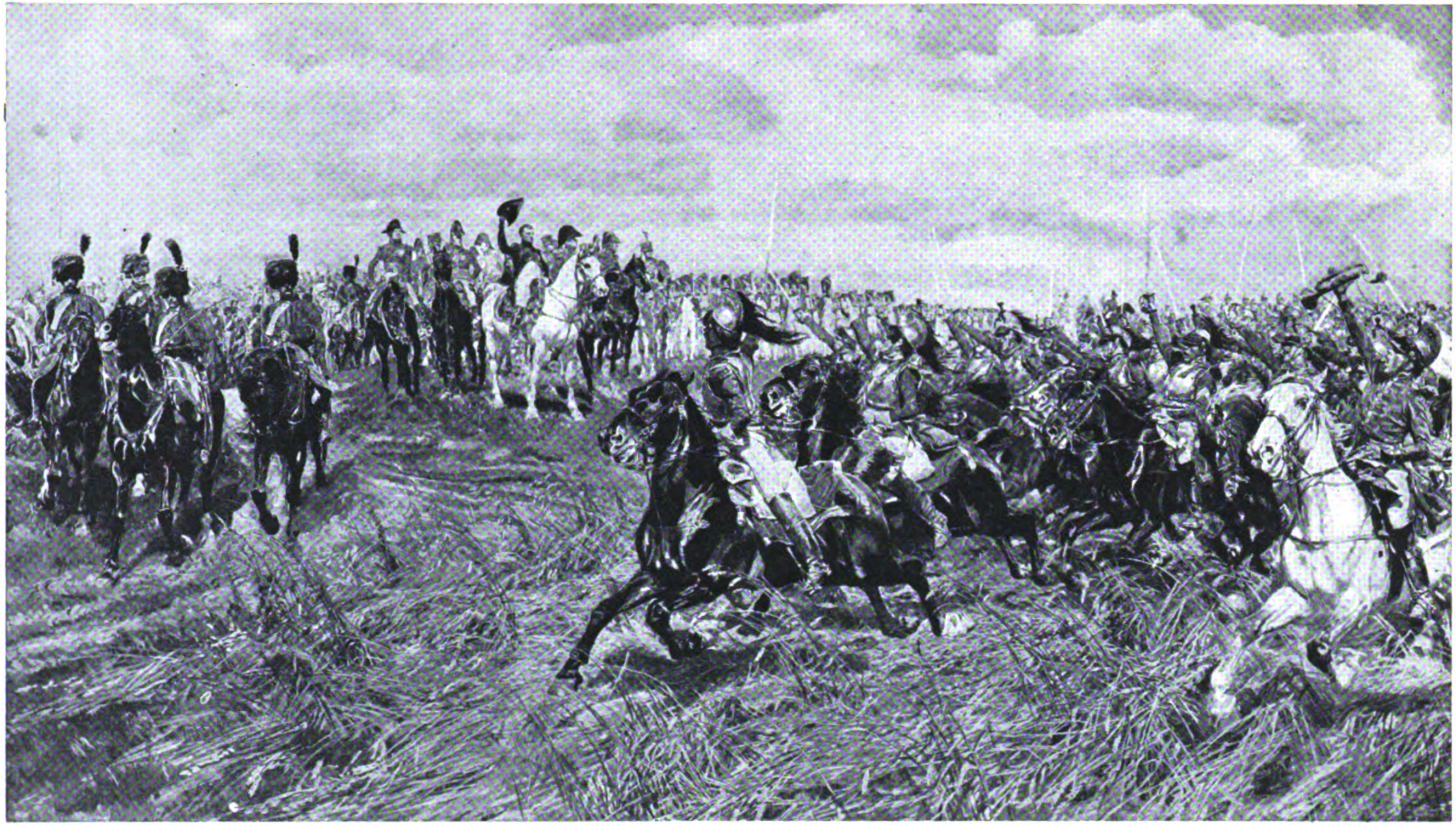
Nearly all the nations of Europe rose against France on account of these doings of the Revolution, and the Convention that then ruled the country had hard work to manage the war. But they succeeded in driving back the invading armies.

In Paris, violent quarrels arose in the Convention. Some wished one sort of government, some another, and it ended in the strongest party deciding that men must be forced to do as they wished, through fright and terror. The last fourteen months of the Revolution are called the Reign of Terror, and it is believed that at least 16,000 persons lost their lives in this awful time.

WHEN THE CHILDREN OF FRANCE PLAYED WITH TOY GUILLOTINES

There is a handsome square in Paris now called the Place de la Concorde, then called the Place de la Révolution, and here a tall wooden machine, called after its inventor, the Guillotine, stood always ready to cut off the heads of the condemned. No one was spared who was even suspected of not agreeing

NAPOLEON'S ARMY CHEERING THE EMPEROR ON THE BATTLEFIELD



Napoleon led his armies through hundreds of battle scenes like this, which shows us the battle of Friedland, against Russia—so terrible for both sides that if such slaughter had continued neither France nor Russia would have had any fighting men left. The famous French artist Meissonier here shows us Napoleon's cavalry cheering the Emperor as they charge the enemy.

with the party in power. Children were given toy guillotines to play with, women wore brooches in the shape of tiny guillotines, and, worse still, women sat knitting and chatting in the square while the carts rumbled up and the heads fell. And not only in Paris, but in the towns of the provinces, guillotines were set up, and thousands of innocent people perished.

At last the terrible madness of killing showed signs of wearing itself out, and the more moderate party succeeded in getting some power. Marat, who had done so much to cause the horrors by the teaching in his newspaper, was killed by a brave young woman, Charlotte Corday, who thought it would be a noble deed to free her country from such a monster, and many others who had tried to force men to obedience by the terror of the executions perished at the guillotine even as their victims had done.

THE COMING OF THE BRONZE-FACED MAN IN THE MARTIAL CLOAK

The Reign of Terror came to an end when Robespierre and his followers were brought to the fatal steps of the guillotine. Robespierre had been a leader of the violent party all through, and could sway men by his clever speech and his absolute determination. There was, however, from time to time, fighting again in the streets of Paris. Royalists were trying to restore the Monarchy. The Directors, who then had the power of carrying out the laws of a new Constitution, chose a young artillery officer to lead the Republican soldiers against them. Citizen Bonaparte they called him. He had done well in defending Toulon, the naval station on the Mediterranean near Marseilles, and was now in Paris, looking on.

Let us take a good look at the clear-cut, strong face as the young officer gives the command to fire, and his guns roar and thunder round the Church of St. Roch. You can see the marks of the grape-shot on St. Roch to this day. No more resistance by insurrection for the time was possible. "Citoyen" Bonaparte was loudly called to be "General" Bonaparte, and from this time onwards for twenty years this short, bronze-faced man became not only the most living power in France, but in Europe. All European history for these twenty years is troubled and overshadowed by the figure in the full martial cloak and the cocked hat.

NAPOLEON, THE MAN WHOM NOTHING COULD HOLD BACK

Napoleon Bonaparte was the son of a lawyer in Corsica, and had to learn to speak French at school; it is said that he always spoke French with an Italian accent. He had many difficulties to face before he could place his foot on the lowest step of the ladder of fame; but he overcame them because he was a genius, with abilities above ordinary minds, and he had an intense power of making others believe in him and adore him. When he once made up his mind that a thing was possible, no mere difficulties daunted him. He led his starving and ragged soldiers, when he first took up the command, to a series of brilliant victories in the pleasant, fertile fields of Italy, against the Austrians. Then, with his unerring eye, seeing how important Egypt was to the British, on the road to India, he carried his troops there to fight the Mamelukes and establish a footing for France. "Soldiers," runs his well-known speech as he encouraged them under the hot sun, "forty centuries look down on you from these pyramids."

Fortunately for British plans, Nelson was able to destroy the French fleet in the battle of the Nile, and the victorious army had to stay for a time prisoners in Egypt. Napoleon himself returned in a single ship to France, and succeeded in changing the form of government, and in getting himself made First Consul. As soon as he had shown he could manage the affairs of the country as well as he could lead an army, he dashed off to Italy again, which the Austrians had won back. This time we see him leading his men over the rocks and ice and snow of the St. Bernard Pass, cheering them on with the music of the band. How surprised the Austrians were when the Army swung down upon the plains! The great victory of Marengo followed, but at the same time the army left in Egypt was defeated by the British.

FRANCE IS AT PEACE AGAIN, AND NAPOLEON IS CROWNED BY THE POPE

In the peace that followed, the First Consul found time to start many good works at home—roads and bridges were

THE MARCH OF A BROKEN-HEARTED ARMY

To punish the Russians for disobeying his orders, Napoleon marched with a large army across Europe and **seized their ancient capital, Moscow. But the Russians set fire to the city and fled, and the French troops could not get sufficient shelter or food. Winter, too, was coming on, and Napoleon had therefore to retreat.**

The French army was hampered in the retreat from Moscow by thousands of camp followers, including women and children, and it was only by the bravery of Marshal Ney, who is seen in this picture commanding the rear-guard, that any returned to tell the story. Of half a million men who set out only a few thousands came back.

made, trade was encouraged, education was improved; French families who had fled in the Revolution times were allowed to return in peace; services were again held in the churches. Soon the time came when the Chief Consul succeeded in once more changing the form of the government of France, and this time he became Emperor—Napoleon I.—and set up a splendid Court, making princes and princesses of his brothers and sisters, dukes and marshals of his generals. He made the Pope come to anoint him Emperor at Notre Dame, and crowned himself and his wife, Josephine, with a beautiful golden laurel wreath.

Again Napoleon crossed the Alps, this time to be crowned King of Italy, with the famous iron crown of Lombardy.

Many traces of Napoleon are to be found in Switzerland, chiefly in the magnificent roads he made or planned over the mountain passes.

THE COUNTRY THAT NAPOLEON COULD NOT CONQUER

His next plan was to conquer England, but the "silver streak" of the Channel and the Navy saved it; the large army gathered at Boulogne was finally marched off to help in the Austrian campaign. Another of Napoleon's great victories was soon won. After Austerlitz, the English Minister, Pitt, said sadly: "Roll up that map of Europe; there will be no need for it for ten years to come," meaning that Europe was to be a battlefield for ten years more. Napoleon had now plenty of kingdoms to give away, and he made his brothers kings of Naples, Holland, part of Prussia, and Spain.

To ruin Great Britain, which had just won the important victory of Trafalgar, and which he could not conquer, Napoleon ordered all Europe to close their ports to British ships, so that no British goods could find a market. Most of the countries had to obey, and much loss and suffering followed. But brave Portugal refused to agree, and Great Britain sent an army to help her, under the general who was later the Duke of Wellington. The French were slowly and surely driven out of Portugal, and finally out of Spain across the Pyrenees. Napoleon's plan also led to war with Prussia and Russia, and although he defeated these countries at the battle of Friedland, after a terrible campaign, he was glad to make peace at Tilsit.

Soon after this Napoleon married an Austrian princess, and their little son was called the King of Rome from his cradle, as we read elsewhere. Great was Napoleon's joy over his boy, for now he thought the Empire was sure to last, and his son would reign after him.

HOW NAPOLEON MARCHED TO MOSCOW AND FOUND IT A CITY OF FIRE

By this time France was tired of incessant war, for thousands of the youngest and finest men were drawn away from their homes, often never to return; and money had to be found, for there is nothing more wasteful and useless than spending money on building battleships, and firing guns, and sending men away to be killed in fighting. But Napoleon wanted to punish Russia for breaking his decree about trading with England, and he led an army into the heart of Russia, to Moscow itself. The Russians could not prevent his doing this; but, as we read on page 2094, they burnt their holy city, and destroyed or carried off all the food they could, so that the French had to start home again in snow and bitter cold winds. The retreat from Moscow is one of the saddest events in history. All France had been darkened by the shadow of the sword, as her youngest and strongest sons were drawn from their homes to fill up the ranks of the Grand Army, together with such Germans and Poles as could be collected on the way. Some 400,000 or more, with cannons and horses and bands, and wearing fine uniforms, set their faces bravely eastwards.

THE STARVING TRAIL OF MEN IN RAGS, FOR WHICH FRANCE SUFFERS TO THIS DAY

A few months later, back on the same long route, there crept a starving trail of men in rags, in utter misery and dejection, for eight long weeks. And the rest? Burned in the fires of Moscow, left in Russian prisons, dead under the snow, or under the ice of the frozen rivers. For Napoleon, who till now never forgot, never failed to foresee and plan everything with wonderful skill, seemed suddenly to lose his great powers. He had forgotten how soon bitter winter comes on in Russia; he had forgotten the army was in summer clothing, and that stores of food must be had for men and horses; he had forgotten to make arrangements in case his plans did not turn out as he expected. France to this day feels the loss of the fine men who died so miserably on the retreat from Moscow.

Napoleon left his army as soon as it was out of Russia, and hastened to Paris. After a hopeless struggle to keep his power, he gave up his crown, and went to live in the little island of Elba.

NAPOLEON'S ESCAPE FROM HIS ISLAND PRISON, AND HIS DOOM AT WATERLOO

About a year later, the Powers of Europe were still busy settling how to restore the map, which Napoleon had so altered by his conquests, when they were startled by the news: " Napoleon has escaped from Elba, and is marching on Paris." We read the story on page 812. The very people who had stoned him out of France, the very soldiers sent to take him, were won by a flash of the old magic power of his name and presence. Napoleon crossed France like a conqueror, and in fifty days after he reached Paris he had an army together. It was the shortest campaign ever led, even by this man of rapid marches, of quick determination and instant action. There were three days of wonder, and the battle of Waterloo won peace for Europe. The English and Germans, under Wellington and Blücher, were the victors, and the power of Napoleon was crushed for ever.

The Powers were afraid to let Napoleon stay anywhere in Europe, and so he was taken to the little lonely island of St. Helena, in mid-Atlantic—such a speck upon the map!—where he died six years later. Years after, his ashes were brought to Paris, to rest amongst the French people whom he loved so much, as he said in his will. It is difficult to understand a love which led thousands and thousands of them to death in the prime of life.

THE CHANGES THAT CAME IN FRANCE, AND THE FALL OF THE EMPIRE

For sixty years there were often difficult and troubled times. There were many changes of government, for France had in turn three kings, a Republic with a President, an Empire in which the President became Emperor, and then a Republic again. The President-Emperor was the nephew of the great Napoleon, and was called Napoleon III. Four times revolution broke out again, and there was fighting in the streets of Paris.

The end of the Empire under Napoleon III. was tragic, and it all happened little over thirty years ago.

The Emperor was persuaded to rush into war with Germany without due reason or preparation. Within six weeks terrible battles spread ruin and sorrow over the beautiful borderlands of the two countries, and at Sedan Napoleon III. and his army gave themselves up to the victorious Germans. A Republic was again proclaimed in France. For four months the German army surrounded Paris, so that no one could go in or out, except by balloon, and letters were sent by carrier pigeons.

The headquarters of the German king, hitherto called the King of Prussia, were in the Palace of Versailles, and it was here, in the Great Hall of Mirrors, during the siege of Paris, that he was proclaimed German Emperor.

THE PLACE OF THE REVOLUTION THAT HAS BECOME THE PLACE OF PEACE

When the city was starved into giving in, it was occupied by the Germans for forty-eight hours. They were still on the heights overlooking the city when it underwent a second siege. Frenchmen were fighting against Frenchmen. For two months a large force of soldiers supported a body called the Commune in trying to make the capital independent of the rest of France. When the Communists found they were losing they set fire to the buildings. It was partly the terms of the peace which so enraged the Communists. France had to give up the two beautiful provinces of Alsace and Lorraine, won by Louis XIV., and this is still a great grief to the country.

In that fine square now called the Place de la Concorde, where the guillotine stood in the Reign of Terror, there are some statues representing eight of the chief towns of France. On great holidays these statues are all gaily decorated with tricolour flags and garlands—all except one: the marble figure of Strassburg in the lost province of Alsace is draped in mourning. The Republic proclaimed after Sedan in 1871 is still the form of government; the President is elected every seven years.

The next story of France begins on 2391.

NAPOLEON AT FONTAINEBLEAU

Napoleon was one of the greatest conquerors and rulers that the world has ever known. By the unaided power of his great personality he rose from a poor Corsican boy to the position of ruler of all France — nay, almost all Europe. Here we see him at the beginning of his downfall, the first time he was forced to abdicate the throne. He is about to embark for Elba and is saying farewell to his soldiers, who idolised him. His parting from his generals at Fontainebleau, when he kissed the eagle on his standard good-bye, was one of the most pathetic scenes in a life of great victories and overwhelming defeats.

THE WONDER OF TIME AND TIDE

CONTINUED FROM 2226

In the study of Nature we usually find that changes which go on, such as night and day or the seasons, do not go on always in a particular direction, but go and come, go and come—so that, after they have happened twenty or a million times, things are exactly as they were before. These changes which seem to go round in a circle are usually called cyclic changes, and the study of Nature is full of these cycles. Day and night is the one we know best, but that is a very short cycle compared with many. In the study of the solar system, we find many cycles compared with which day and night are not a moment.

For instance, there is a slow kind of wobble of the earth upon its axis—the line running through it from Pole to Pole—which occurs in cycles twenty-six thousand years long. Further, the paths in which the planets travel get more or less tilted to each other instead of all being on the same level as if they were traced on this paper; and these tiltings go and come in huge cycles that last for countless ages.

Then again, as instances of shorter cycles in Nature, there is the movement of water on the earth, from sea to sky, then as rain forming streams and rivers, and back to the sea again; and there is the cycle of the elements, such as the carbon of carbonic acid, travelling from air to plant, plant to animal, and then from the animal back to the air again.

All these cycles and thousands more are vastly interesting in many ways, and we cannot understand them too well. Yet there is one point of view from which they are not so interesting. They are the causes of a great many things that happen on our earth and in the universe; but as, at the end of a cycle, things are what they were at the beginning, *they do not lead anywhere.*

Suppose that amid all these great workings of Nature we could find some little thing that happened and went on happening, but always in the same direction, or, at any rate, not bringing things back just as they were, then, though this might be something that at any moment could scarcely be noticed, it would be, in one way, a million times more interesting than any of these cyclic or circular changes.

In the one case things are just spinning round and round, so to speak, and, however cleverly and wonderfully they spin, it is still only round and round; but in the other case things are going somewhere, and the question is—*where?* They may be doing so very slowly, so slowly that the whole length of the life of mankind may be nothing compared with it, but yet, as there is no end to time, they must in the long run utterly change the world if they really go steadily on and do not turn back upon themselves. So we are bound to be more interested, after all, in the smallest thing that goes on in one direction than in the biggest thing that comes back to where it started, even though that coming back should take a million years. With this in our minds let us come to study the tides.

HOW MEN FIRST THOUGHT THE EARTH WOULD LAST UNCHANGED FOR EVER

In studying the solar system, men found first that the sun was in the centre of it, next that the planets moved in a particular way round the sun, and next that the sun and the planets were balanced by the law of gravitation. Then they studied the way in which the planets were affected by each other through gravitation, and they came to the conclusion that the solar system is what we call a stable thing—that is to say, a thing so made that, as long as nothing disturbed it from outside, it would last as it is now for ever. But in their studies they left out of account one thing, and that is the tides. They made their calculations about the sun and the planets and their moons as if each of these bodies was and always had been a perfectly solid, rigid, unyielding mass of matter. They could prove on paper that these masses of matter at their present distances from each other and with their present movements would undergo slight changes between themselves, but that these would only be cyclic changes, and that therefore the solar system was made as if to last for ever.

TIDES ON THE SUN, ON THE MOON, AND ON THE EARTH

But we all know that it is not true to think of the earth as a single, solid, rigid piece of matter. If no other evidence were to be had there would still be the evidence of the tides, which all can see. Now, these tides are made mainly by the attraction of the moon, but the attraction of the moon acts on all the matter of the earth as well as the surface. So, if the inside of the earth is not rigid, but liquid, as the earth spins, tides must be caused inside it by the moon. If the inside of the moon is still liquid, as it may be, the earth must cause disturbances there too.

Then take the case of the sun. We have already learnt enough about the sun to know that he is as different as can be from a solid, rigid, unyielding mass of matter. If there is any force of gravitation to raise tides on the sun as he twists, he is certainly very well suited for producing the most tremendous tides we can imagine. It is a necessary consequence of the law of gravitation that every planet, and the moon of every planet, must raise tides upon the sun as he spins upon himself once in every twenty-six days or so.

One at least of the planets, Jupiter, is so big, and therefore has so much power of gravitation, that the tides it raises upon the sun must be by no means small. Jupiter itself is probably still a kind of very small sun, and is certainly anything but rigid and solid, for different parts of Jupiter spin round at different rates, just as we have seen in the case of the sun himself. So Jupiter's moons, and the sun, not to mention the earth and other planets, must raise tides upon Jupiter. The same is true of Saturn.

HOW WE KNOW THAT THE TIDES WILL CHANGE THE WHOLE EARTH

All this is enough to suggest that perhaps the question of the tides is a very much bigger one than we had thought. At any rate, it is quite certain that we must discover what the tides do in the solar system before we can be quite sure that it will endure for ever as it is now. The old calculations did not take the tides at all into account, and perhaps they make a great difference. A great English astronomer, Sir George Darwin, has been working at this subject for many years, and he and others have taught us to discover in the tides a source of change which, though it acts very slowly, yet acts in a certain direction and not circularly, so that in the long run (though how long this takes we can scarcely guess) the tides must utterly change the solar system as we know it now, and as they have partly made it, into something very different.

Let us just remind ourselves of the simple facts about the tides we know best. The connection of earth-tides with the moon has been known for thousands of years, though of course gravitation was not then known. We now understand that as the earth spins under the pull of the moon, the water next the moon is heaped up, forming the high tide, while the solid body of the earth is pulled towards the moon more powerfully than the water on the far side of the earth is pulled towards it.

THE TUG-OF-WAR BETWEEN THE SUN AND THE MOON AGAINST THE EARTH

So the earth is drawn away from the water, and the water left behind forms a high tide on the far side of the earth as well as on the side next the moon. In between the two, on the parts of the earth between these points, we shall find the low tides—as the water cannot be in two places at once. The sun acts in exactly the same way as the moon, only with less power, as the sun is so much farther away. The pull of the sun and the pull of the moon must be in about the same line when the moon is new or when it is full. The toy frontispiece that should be bound to face page 2219 of this book shows us that in a moment. But at other times the moon and the sun are pulling more or less at right angles to each other. So, when the moon is about new or full, we have high tides that are higher, and low tides that are lower, than at other times. These biggest tides are called spring tides, and the others are called neap tides ; the spring tides being due to the sun and moon helping each other, and neap tides due to the sun and moon opposing each other—that is to say, being due to the pull of the moon *minus* the pull of the sun. The moon is much nearer, and therefore stronger, and so wins in this mighty tug-of-war.

HOW THE TIDES ACT LIKE A BRAKE ON THE SPINNING EARTH

Now, it can be proved beyond dispute that these great tidal waves, constantly travelling round the earth as it spins, act like a brake upon a spinning wheel. The power of the tides comes from the power with which the earth spins, and so the tides are constantly drawing upon that power. This means that the earth must be spinning less quickly from day to day. The tides are increasing the length of the day. No doubt the difference between to-day and to-morrow is a very small one, and any guesses we can make as to the rate at which the lengthening of the day goes on are very doubtful, and not worth remembering, but there is no doubt at all that this change is really going on.

We can prove also beyond dispute that another consequence of the tides is that the moon is getting farther away from the earth. As the moon does so, it must take longer to travel round the earth—in other words, *the month and the day are both getting longer.*

We can trace the course of change both backwards and forwards, and in each case our conclusions agree wonderfully with what we can learn in other ways. If the moon is now travelling away from the earth, it must once have been nearer the earth than it is at present, and the month must have been shorter. If the day is being lengthened because the earth's spinning is retarded by the tides, then the day must once have been shorter. If we go back far enough, we find that the day must have been not longer than about four hours. We are not entitled to go back farther still, because we believe that if the earth had spun much quicker than this—that is to say, if the day had been much shorter than this—it would have spun so fast that it must have flown in pieces.

WHY IT IS THAT WE SEE ONLY ONE SIDE OF THE MOON

Now, if we trace back the history of the moon and the month, we find that when the earth spun upon itself in about four hours, making a four-hours day, the moon must have gone round the earth in four hours, making a four-hours month. But this is just as if the earth and the moon had been one body, only with a break between them, for they spun round together. We only need carry our minds a little farther back in order to conclude that before this time the earth and the moon must really have been one body; in other words, that the moon is a broken-off portion of the earth. Now, that is exactly what we have reason to believe on other grounds, and so it is very interesting and important that the study of the tides and their influence on the earth to-day should have brought us back to a state of things when the earth and the moon must have been one.

We may here remind ourselves of something we have already learnt. It is that the moon spins upon itself in just the same time as it takes to go round the earth, so that, as we know, we always see the same face of the moon. It would be a most extraordinary thing if it were a mere chance that the time of the moon's travelling round the earth and the time of the moon's spinning on itself are just the same length. But it can be shown that it is not a chance; on the contrary, that it is what we should expect if this theory about the moon and the tides and their history is true.

WHEN ONE DAY MAY BE AS LONG AS TWO MONTHS ARE NOW

It is interesting also for us to know that, when the moon becomes cold all through—so that it is rigid, and so that any tides in its interior must cease, as they have long ceased upon its surface—then perhaps the law which compels the moon to spin upon itself in just the same time as it takes to travel round the earth will cease to apply. Thus, at some remote date, the moon may go on spinning upon itself at the same rate as at present, but take longer than at present to travel round the earth. This will mean that, if the human race still exists upon our planet, the astronomers of that distant day will be able to see the other side of the moon.

But that is quite a small point compared with the great things which the study of the tides leads us to expect as regards the future. The moon must go farther and farther from the earth, and take longer to travel round the earth; and the earth's day must steadily grow longer. But it can be proved that these changes will not go on at the same rate. The day will grow longer more quickly than the month does—indeed, that must be happening now; and in millions of years to come the month and the day must again be of the same length as each other, as they were when the moon was first formed from the earth. Only, whereas their length at first must have been about four hours, their length then will be about fifty-seven of our present twenty-four-hour days.

WHY THE TIDES ON THE EARTH MUST ONE DAY CEASE

The moon will then be at a great distance from the earth, and so will take all that long time to travel round the earth; but the brake action of the tides will have so much slowed the earth's spinning that the earth will also take fifty-seven days to spin round upon itself. This means that the moon and the earth will spin round together as if a great bar of steel ran between them, only the force holding them is not steel, but the force of gravitation; and if we could try to replace gravitation by a steel bar, we should find the moon too small to hold its end of a steel bar big enough to do the work which gravitation does so easily.

Now, if there were only the earth and the moon to consider, it could be proved that this state of the earth-moon system which we have just described would be a durable one; but we still have to reckon with the sun. The tides raised by the moon upon the earth will one day cease because, as we see, the earth and the moon will go round together as if a bar of steel ran between them. But there will still be the sun-raised tides upon the earth, or disturbances corresponding to tides in the fluid matter inside the earth. We have left these out of account so far, because they are so much less powerful than the tides raised by the moon; but still, there they are, and there they will be when the moon-raised tides have ceased; and then, as now, they must act like a brake on the spinning of the earth.

THE TIME WHEN IT WILL BE LIGHT AND DARK FOR WEEKS TOGETHER

Now, this will mean something which you and I can scarcely imagine, so strange does it seem. It will mean that the moon travels round the earth in less time than the earth takes to spin on itself. The month will actually be shorter than the day. That is so very different from what we find at present that we can scarcely believe it. But if we turn to another planet that has a moon (or rather two moons), and if that planet is smaller than the earth, so that its changes go on more quickly, and so that it may now be in a state which the earth will not reach for ages, then we shall actually find just this extraordinary thing that astronomers foretell for the earth and its moon.

The wonderful planet Mars, our outer planetary neighbour, is much smaller than the earth, is probably much older than the earth, and has two moons, which were discovered rather more than thirty years ago. The inner of these moons travels round

Mars more than three times while Mars spins round once on itself—that is to say, the day of Mars is more than three times as long as the month, if we measure the month by the inner of the two moons of Mars. Time was, not so long ago, when this extraordinary peculiarity about the movement of this moon of Mars could not be explained; but now we can explain it by supposing that the spinning of Mars has been retarded by tides raised by the sun, just as is happening, and will continue to happen, on the earth.

THE SLOW CHANGE THAT THE TIDES ARE MAKING THROUGH THE CENTURIES

It is perhaps possible for us to trace the future history of the solar system, as the tides will affect it, a little farther than we have done, but it would be little more than guess-work. The great point for us to remember is that in the action of the tides we find something which, though it acts so slowly that we cannot see its results, is yet acting in a definite direction from which there can be no return. The solar system has not always existed, but is a product of change acting throughout great spaces of time; nor can it exist for ever, for changes are still going on in it which, in the course of ages, will make it very different from now.

We may end this part of our story by noticing two other kinds of change in the solar system which, just because they go on steadily in one direction, are of such great importance. The first is that the whole system is steadily cooling; the sun and the planets are all losing their own stores of heat. Each of them catches a little heat and light given out by the others, but by far the greater part of it is scattered into space; and though it goes somewhere, and is not lost to the universe, it is lost to the solar system. We have lately learnt that the sun and the planets are making heat within themselves from something, but that something cannot last for ever. The heat and light the solar system receives from the stars are nothing compared with what it loses, and it must one day grow cold.

Yet another change is always acting in one direction, and that is the change produced by gravitation. Under its influence the sun and the planets are shrinking, and we must suppose that in the long run all the bodies which now travel round the sun and constitute his system, including the earth, must be at last drawn into the sun, and then the solar system will be no more.

THE ETHER THAT WILL ONE DAY MAKE THE SOLAR SYSTEM ONE ROUND BALL

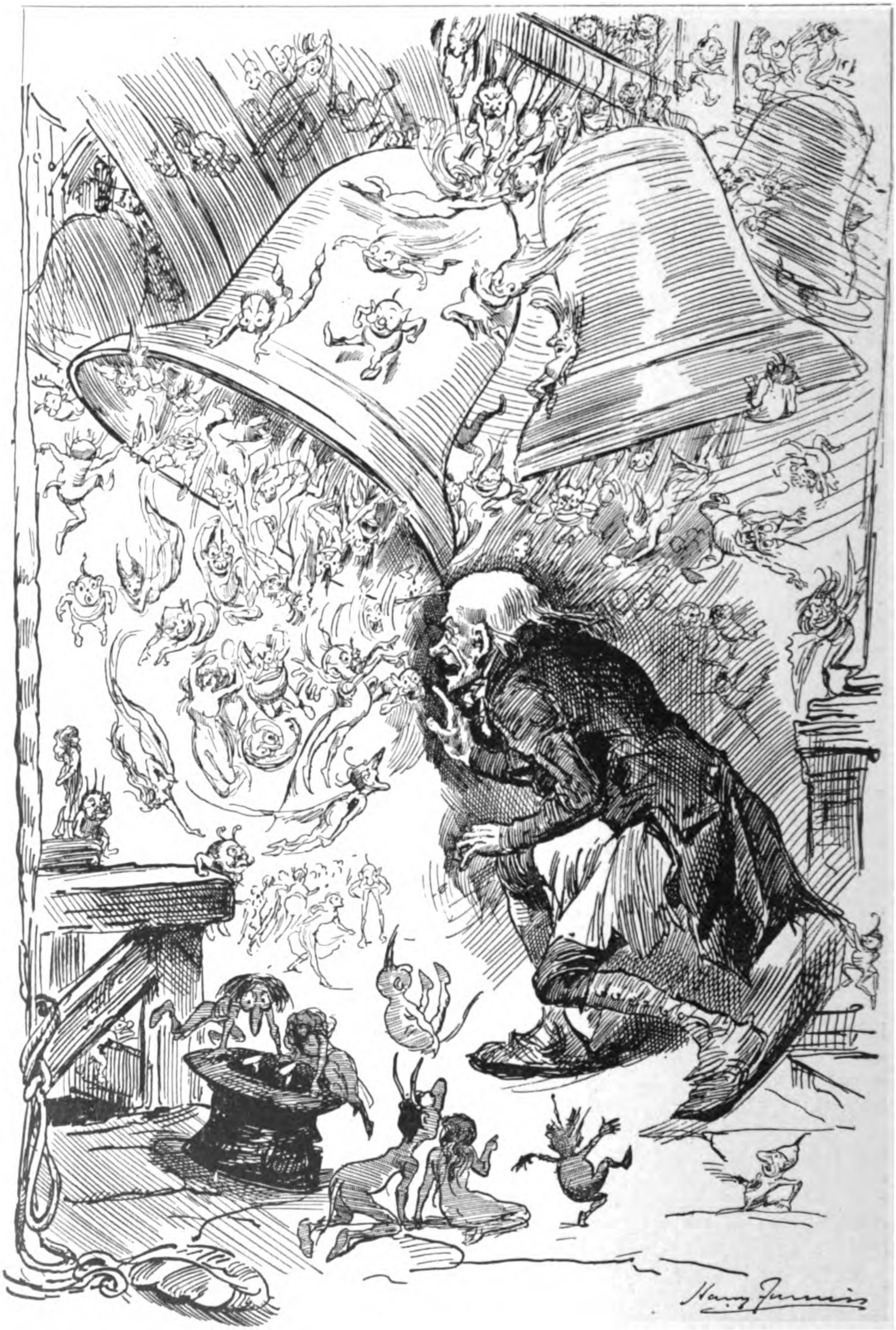
Quite lately astronomers have come to see that there is another question. The planets and their moons, as they move, are moving *through something*. That something is not the air, for the air is the outer part of the planets or moons that have an air, or atmosphere. It is the ether. We are perfectly certain that the ether really exists, and we already are beginning to learn just a little about it. Now, the question is whether the ether must not slow down the movements of bodies passing through it. Must there not be at least *a little* friction and resistance, as when a fish swims through water, or a bird or a bullet flies through the air? Probably the ether does have such an influence. Its influence is certainly, if it exists, very small. But the smallness of a process does not matter if it goes on in one direction, and if there is no limit to time. It is the slowing action—infinitely slow—of the ether that will probably help, some day, to make the solar system into one dead round ball—perhaps the very state in which it began, ages ago, when it met some other body in the sky, and was scattered into a nebula.

THE REALLY WONDERFUL THING IS THAT WE WONDER AT ALL

But when we speak of the past and the future of our system as influenced by the tides, by loss of heat, and by gravitation, we must never forget that the time which these changes take is infinite compared with our own lives. No one has imagination enough really to understand how great are the stretches of time with which astronomy has to deal, any more than we can really understand the size of the spaces and the distances with which astronomy has to deal. The really wonderful thing is that we human beings should have the power, as we spend the brief moments of our life on this tiny earth, to gain, at any rate, some little idea of the grandeur and the majesty and the mystery with which we are surrounded.

The next part of this is on page 2423.

TOBY AND THE FAIRIES OF THE CHIMES



When the chimes began to ring many wonderful things did Toby see. The spirits of the bells were swarming all around him; goblins and fairies and elfin spirits in endless numbers were pouring out in all directions from the chiming bells, until the whole interior of the tower seemed thronged with them.

The Child's Story of FAMOUS BOOKS

THE STORIES OF CHARLES DICKENS

We have already read the most famous of all the Christmas books written by Charles Dickens, and we are now to read two more which are almost as well known as his "Christmas Carol." Indeed, it is difficult to say whether "The Cricket on the Hearth" or "A Christmas Carol" is the greatest favourite with his readers. Certainly they are both most delightful stories, not only for Christmas, but for all the year round, and "The Chimes," which is described as a "goblin story of some bells that rang an old year out and a new one in," is always popular.

THE CHIMES—A GOBLIN STORY

CONTINUED FROM 2202

We have all listened at some time or other to the music of the church bells as they ring out their pleasant chimes every quarter of the hour. The chimes we are now to hear about ring also in four quarters, and the story they tell us in ringing the first quarter runs something like this.

There was the quaintest old fellow you could imagine, named Toby Veck, but better known as "Trotty," because he had a funny little way of walking which gave him the appearance of "trotting." He could not go even a little distance without this jumpy style of movement, and as he was employed, whenever he could get a job, in running errands for people in the district of London where the fine old church with the musical chimes stood, perhaps his little trot was useful; it certainly kept him warm in the cold weather.

OLD TOBY VECK, THE PORTER

As poor old Trotty had only the shabbiest of clothes and the leakiest of boots, it was no easy matter for him to keep warm in winter time. He wore knee-breeches and long gaiters, as some old-fashioned folk did seventy or eighty years ago; but all his clothes had been worn by other people long before they came to him. His tall hat, for instance, was so crushed that it had long been ready for the dust-heap, and even his little white apron, which indicated that he was a porter, had long ceased to be anything but a rag.

Times were very, very hard with Trotty; but he was a cheerful old soul, honest and always willing to do his best, on any errand he was sent, for the sixpence with which he was usually rewarded. But sixpences were few, and anything but "nimble," one winter when the weather was bad, and even Christmas scarcely seemed to promise better times. Trotty was down in spirits, and things would have gone badly with him but for his daughter Margaret, a bright and cheerful young woman, whose needle helped to keep her and her father in food. Margaret had a sweetheart, Richard, an honest young blacksmith, who wished her to marry him on New Year's Day; but even this good news hardly brightened the spirits of Trotty Veck, as everything at that time seemed to be against him.

Margaret had brought Trotty his dinner—a savoury dish of tripe, which he relished greatly—and he was eating this on the steps of a gentleman's house, when out came that person, Alderman Cute, with some friends, who made some very unfeeling remarks about the food of the poor, so that Trotty's heart was down in his boots again. The alderman, however, gave him a letter to carry to a pompous old person named Sir

Joseph Bowley, M.P., and paid him only a sixpence for the errand.

As he trotted off gloomily with the letter, the chimes were pealing from the steeple, and they seemed to say to Trotty—at least he thought so—"Put 'em down! Put 'em down! Good old times! Good old times! Put 'em down! Put 'em down!" So ends the first quarter of "The Chimes."

THE LETTER THAT TOBY VECK CARRIED TO SIR JOSEPH BOWLEY

He thought himself a very remarkable person, this Sir Joseph Bowley, and he and his precious wife pretended to take the greatest interest in poor people; but they were really two self-satisfied humbugs, and were quite without pity for anyone but themselves. It turned out that the letter which Trotty had carried from Alderman Cute was to ask Sir Joseph about a certain Will Fern, who had just come to London from the country village where Lady Bowley carried on her pretentious work among the poor.

Will Fern, with his dead brother's orphan child, was really in London searching for a kind woman who had been a good friend of the girl's mother; he was out of work too, and had applied to Alderman Cute for advice and assistance. But as Will had not taken kindly to Lady Bowley's plans for improving the poor of her village, and had refused to spend his evenings at her class, making buttonholes, her ladyship did not hesitate to think him guilty of any crime, so that Sir Joseph dictated a letter to Alderman Cute advising him to have the rascal locked up.

TROTTY MEETS TWO WEARY WANDERERS AND BECOMES THEIR GOOD FAIRY

Poor old Trotty was almost dazed by the insolent way in which this good and kindly couple treated him, and also at the tone of the letter he had heard being directed to the alderman; so that he cut rather a stupid figure when he was asked to be off with himself and the letter. Still muddled in his mind, as he was trotting back, he ran against a man and a child in the dark streets, and got into conversation with them. To Trotty's surprise the man turned out to be none other than Will Fern searching for the house of Alderman Cute. So, as you may suppose, Trotty told him all he knew, and warned him not to go there on any account, but to come home with him to spend the night.

To think that he was to be of such great service to the poor wanderers completely changed Trotty's spirits, and as soon as he got home he was tremendously busy helping Meg to get supper ready, having bought a rasher of bacon and an ounce of tea with his sixpence, but refusing himself to eat anything, though he was starving, on the pretence that it was well known to his friends that he never cared, himself, for rashers nor for tea. "I like to see other people enjoy them," said Trotty, speaking very loud to impress the fact upon his guest; "but to me, as food, they're disagreeable."

Now the chimes were ringing again, and they seemed to say, "Toby Veck, Toby Veck, door open wide. Toby Veck, Toby Veck, door open wide." This was strange, and he determined to trot out and see if the door of the church steeple was really open, for he had seldom seen it open before.

THE BEGINNING OF TROTTY'S STRANGE ADVENTURES UP THE OLD BELFRY

Out he slipped without his cap or apron, and sure enough the door was open. In he went, and up and up in the darkness, climbing the steps and then the ladders, until he was among the bells, when a sense of dread and loneliness came upon him all at once, and he fell in a swoon. So ends the second quarter.

When the chimes began to ring Toby awakened, and many wonderful things did he now begin to see. The spirits of the bells were swarming all around him; goblins and fairies and elfin spirits in endless numbers were pouring out in all directions from the chiming bells, until the whole interior of the tower seemed thronged with them. But when the chimes stopped, the elfish figures, one by one, faded into nothingness, and then when the bells hung still Toby noticed for the first time that each bell was itself a strange and mysterious figure with a long beard, and its muffled hand on its goblin mouth.

He did not know what to do, he could not move away, and lo! the bells began to speak to him. They asked him all sorts of strange questions, and accused him of having done them a wrong for thinking that they had ever uttered a harsh note against the poor or had ever sung, "Put 'em down! Put 'em down! Good old times! Good old times! Put 'em down! Put 'em down!" Toby was really greatly distressed at this, pleading that he had never meant to offend them; and when the strange figures said, "Show him what he calls himself," he was aghast to see the tower open at his feet, and far below his own body lying dead! A little fairy figure, the Spirit of the Child, now appeared to him, and showed him strange pictures of his own daughter Meg sitting at work in a miserable room with Will Fern's niece.

Then he heard them talk, Meg weeping bitterly the while, about the cruelty of their lives. And then he found himself transported to a great festivity at Bowley Hall, where Sir Joseph and his lady were celebrating the birthday of the latter, and he heard that a very rich banker had just shot himself!

WHAT TOBY VECK SAW AT LADY BOWLEY'S BIRTHDAY FEAST

But it was a very jolly banquet for all that, until Will Fern came in and said he had just come from gaol, a criminal, as the result of those good people's love of "putting down" the poor and unfortunate. Will's appearance caused a great disturbance at Bowley Court, and in the confusion Trotty found himself spirited away to a miserable garret, where Meg was hard at work, and Richard, the honest smith, in rags, came in to her to tell her that Lilian, Will Fern's niece, would take no help from her; but next came Lilian herself to the garret, where she died of a broken heart. So ends the third quarter.

The Spirit of the Child appears again to Trotty and shows him a very cosy couple in their home. They are Tugby, the fat, lazy porter to Sir Joseph Bowley, who has married Mrs. Anne Chickenstalker, the jolly widow who keeps a "general shop" where Toby owes some money.

He hears them speak of Meg, and of Richard having taken to drink, and—well, altogether poor old Trotty has been having a very bad dream, which is only brought to an end by the dear old chimes ringing a joy-peal for the New Year, and his loving daughter Meg saying to him:

"And whatever you do, father, don't eat tripe again without asking some doctor whether it's likely to agree with you; for how you *have* been going on! Good gracious!"

And then in came Richard, shining with happiness, who kissed his wife that was to be, saying, "The first kiss of Meg in the New Year is mine! Mine! I've been waiting outside the house this hour to hear the bells and claim it."

THE GREAT CHANGE THAT CAME OVER TROTTY WHEN HE WAKENED

"You never in all your life saw anything like Trotty after this. I don't care where you have lived or what you have seen; you never in all your life saw anything at all approaching him. He sat down in his chair and beat his knees and cried; he sat down in his chair and beat his knees and laughed; he sat down in his chair and beat his knees and laughed and cried together; he got out of his chair and hugged Meg; he got out of his chair and hugged Richard; he got out of his chair and hugged them both at once; he kept running up to Meg, and squeezing her fresh face between his hands and kissing it, going from her backwards not to lose sight of it, and running up again like a figure in a magic lantern; and whatever he did he was constantly sitting himself down in his chair, and never stopping in it for one single moment; being—that's the truth—beside himself with joy."

WHY THE LAST QUARTER OF THE CHIMES WAS A VERY MERRY ONE

And while the merry chimes were ringing little Lilian was wakened up, and in came a number of Richard's chums with a drum and musical instruments to make merry for his approaching wedding on New Year's Day, and in came Mrs. Chickenstalker, who hadn't married grumpy old Tugby at all, and—just think of it—she was the very woman Will Fern was looking for, and her joy at finding little Lilian to adopt as her own child was so great that, for all her heavy weight, she got up and danced with the whole happy company to the awful music of the band.

So that the fourth quarter, at least, was a merry one, and the bells now chimed nothing but joy.

THE CRICKET ON THE HEARTH

A Fairy Tale of Home

At some time or another we may have heard the chirrup of the cricket. The merry "chirrup, chirrup," which this little insect makes from its snug corner near the kitchen hearth is a familiar sound to country folk, but it is seldom heard in the cities. In the story we are now to read the cricket plays an important part, and his chirps are heard throughout it. Indeed, the story is divided into three chirps, which you will agree is a change from the old-fashioned "chapters." Let us hear what "Chirp the First" has to tell us.

THE SINGING MATCH BETWEEN THE KETTLE AND THE CRICKET

The cricket is engaged in a lively competition with the kettle as to whose song will be the louder. And it is in every sense a pleasant place for such a competition, as the living-room of John Peerybingle's cottage is as cheery as a bright fire and a busy housewife can make it, and we know how cheery that is.

Peerybingle was a good-natured, lumbering sort of a countryman, over six foot tall, and none too gainly, but honest and warm-hearted. He was a carrier, and drove his horse and cart as regular as the clock along the country road, going to villages on the left of his house one day, and to the right the next. His wife, Mary, was just as bright and happy a little country lass as ever gladdened the home of an honest man. She was younger than John by some years, and very much smaller, so short, indeed, that John always spoke of her as "Dot." They had one child, just a baby in arms, and Tilly Slowboy, a clumsy country girl, was its nursemaid.

THE CARRIER HAS A WEDDING-CAKE FOR "GRUFF & TACKLETON"

There was yet another member of the carrier's family, whose name was Boxer, and him we must not forget, for, just as the cricket had reached the highest pitch of his chirruping, and the kettle had boiled over, Boxer, the dog, came barking at the door, a sign that his master was close at hand.

In a minute more, honest John was inside the room, receiving the heartiest of welcomes from his cheery wife and the chirping cricket. He had driven his cart through the most dismal winter weather, and there was not a more contented man in England that night than John Peerybingle when he sat down to his supper, which the busy hands of Dot had been in the act of preparing as Boxer came barking to the door. By the fireside Dot and John fell to talking of the cricket, and Dot said she loved the busy little creature because he had been chirruping at his merriest when, scarcely a year ago, John had brought her to the cottage as his wife.

They were both so fondly speaking of their love for each other that they forgot the basket of things John had brought in from the cart. But when they did remember it, Dot showed her cleverness by guessing that a round parcel it contained was nothing more or less than a wedding-cake, which John had collected at a baker's for delivering to a very ill-natured toymaker in the village, whose name was Tackleton, but who was called by the name of his firm, "Gruff and Tackleton," because of his unpleasant manner.

THE STRANGE OLD GENTLEMAN WHO WAS LEFT IN THE CARRIER'S CART

This discovery made Dot somewhat sad. She had been at school with May Fielding, the young woman whom Tackleton was known to be anxious to marry, and she had never dared to think that May could marry such a man. Yes; the thought of May having Tackleton for her husband made Dot sad; even the cricket was not singing so merrily now!

The carrier had forgotten something more, however, for he suddenly remembered that he had left an old gentleman in his cart! In another minute he was out at the stable yard with a lighted candle in his hand to see what had happened to his passenger. He found him still asleep, and, wakening him, brought him into the cottage.

"The Stranger, who had long white hair, good features, singularly bold and well defined for an old man, and dark, bright, penetrating eyes, looked round with a smile, and saluted the carrier's wife by gravely inclining his head.

"His garb was very quaint and odd—a long, long way behind the time. Its hue was brown, all over. In his hand he held a great brown club or walking-stick; and, striking this upon the floor, it fell asunder and became a chair, on which he sat down, quite composedly.

"'There!' said the carrier, turning to his wife, 'that's the way I found him, sitting by the roadside! Upright as a milestone. And almost as deaf.'

"'Sitting in the open air, John?'

"'In the open air,' replied the carrier, 'just at dusk. "Carriage Paid," he said; and gave me eighteenpence. Then he got in; and there he is.'

"'He's going, John, I think.'

"'Not at all; he was only going to speak.'

"If you please, I was to be left till called for,' said the stranger mildly. 'Don't mind me.'

"With that, he took a pair of spectacles from one of his large pockets, and a book from another, and leisurely began to read, making no more of Boxer than if he had been a house lamb."

CALEB PLUMMER AND HIS DAUGHTER

Presently there was a knock at the door, and Dot thought it would be somebody calling to take away the old gentleman. But, no; it was only Caleb Plummer, the poor old toymaker who worked for "Gruff and Tackleton." He was a strange little figure, with his old, old face, not too well shaven, his bent old back and his coat of sacking, on which the letters G and T in large capitals, and also GLASS, were printed. The poor old fellow had made himself an overcoat out of some sacks that had contained glass for the toy factory! Caleb had called to see if John Peerybingle had anything for him, and the carrier happened to have two things.

THE BOX OF DOLL'S EYES FOR CALEB'S BLIND DAUGHTER

One was a very tiny flower-pot with a plant in it, and the other a small box of doll's eyes. Both were for Caleb's daughter, Bertha—the flower-pot as a little present, and the glass eyes for her to fit into the dolls that Caleb made.

"To think that she should never see the dolls, and them a-staring at her so bold all day long!" said Caleb. "That's where it cuts."

For Bertha, his daughter, was blind, and all his thoughts were to make her as happy as he could. Caleb was about to go away with his little parcels, when he met another visitor at the door.

DOT, THE CARRIER'S WIFE, IS STARTLED BY THE MYSTERIOUS STRANGER

This was the impudent, unpopular Tackleton himself, Caleb's employer, who had called for his wedding-cake. The last sort of man to be concerned either with toys or with weddings. He hated toys, except that he could make money by selling them. He would rather have sold ugly ones than pretty ones. Not at all a pleasant sort of man, you will see. He talked about his marriage, rattled his money in his pocket, smiled with his half-shut eye—one was always open, and the other nearly shut—and, to the amazement of John and Dot, invited them to his wedding on the last day of January, urging them also to spend a social evening with him before that date. So he went on chatting, trying in vain to make himself agreeable, saying he hated crickets—for the cricket on the hearth was merrily chirruping again—and asking John if he was sure his wife was true to him. This, of course, was just the way to make John dislike him.

Presently, however, as the deaf old Stranger got up and walked to the fireside, Dot gave out a scream which agitated everybody and wakened Caleb, who had been dozing on the wedding-cake box! She said she had only had a sudden shock; but her eyes were still fixed upon the Stranger, and John didn't feel at all easy about his wife. He was mystified as to what had frightened her.

When all the callers had gone and a bed had been made for the Stranger, the carrier sat by the fire smoking his pipe, while Dot sat on a low stool by his side; and the cricket chirped so merrily that John felt his doubts and fears at rest again. Yet, strange to say, Dot in her fancy saw a young man standing by the fireside, just as the old Stranger had stood when she had screamed; and this young man of her imagination was saying sadly, "Married, and not to me!" So "Chirp the First" ends and leaves us puzzled.

"GRUFF & TACKLETON" INVITES CALEB AND HIS DAUGHTER TO A PARTY

When "Chirp the Second" begins, we are at the home of Caleb Plummer, a poor, mean place, full of half-made toys and devoid of all comfort, where he and his blind daughter are at work. It was just a sort of shanty stuck on to the premises of Gruff and Tackleton. "You might have knocked it down with a hammer or two and carried off the pieces in a cart." Here, amidst a most extraordinary mixture of toys in all stages of making, Caleb sat talking to Bertha, while they both were busy with their work, Caleb putting the finishing touches to a doll's house and his daughter sewing on the dress of a doll.

Presently Caleb's employer, the unattractive Tackleton, came in and told them of his intended marriage, suggesting a party beforehand, at which he wanted Bertha and Caleb to be with the Peerybingles to meet his future wife and mother-in-law.

In due time the party was held, and Tackleton made vain efforts again to be agreeable. It was clear that nobody loved him, not even his intended bride, who had consented to marry him more for her mother's sake than his own.

WHAT BEWILDERED JOHN PEERYBINGLE AT TACKLETON'S TEA-PARTY

It was a memorable party to John Peerybingle, for the scheming Tackleton tried to unsettle the honest carrier by making him doubt his dear wife, Dot, by taking him to his office, where they could see her and the Stranger—no longer old and bent, but erect and tall, holding in his hand his false white beard—in close and earnest conversation in another part of the toymaker's premises. Poor John was bewildered, and when he drove his wife, with Tilly and the baby, and the false Stranger back in his cart, his heart was heavy indeed. And that is why "Chirp the Second" ends sadly.

John Peerybingle couldn't speak to his wife of what he had seen; he sat up all night in great agony of mind, for he hated to doubt his wife, and yet he felt she was keeping some secret from him. When he was at his gloomiest, the cricket began to chirp again, and, to his imagination, it seemed to become a fairy, who came and spoke to him and urged him to trust Dot with his very life. Indeed, the fairies played about him all night, and filled his thoughts with pleasant pictures of Dot to drive away the ugly ones.

When it was daylight, he went out to walk about, and soon met Tackleton, who was to be married that day. But, to cut a long story short, "Gruff and Tackleton" was not married at all, for there was no bride to meet him at the church! Yet his bride was married earlier than she had meant, and to another—the old Stranger, if you please. For he was none other than Caleb Plummer's son, who had been in a foreign country for many years, and had loved May Fielding before he went away.

DOT'S SECRET IS EXPLAINED AND THE CRICKET CHIRRUPS MERRILY AGAIN

Dear little Dot had discovered who the Stranger was through his disguise that night she screamed when he walked to the fireside, and she had been the means of May getting her first sweetheart for her husband—a far better arrangement, you will admit, than marrying old Tackleton. When John knew that was the reason of his wife being seen with the Stranger, he was delighted, you may be sure, and Tackleton's wedding-party became Edward Plummer's! But, after all, Tackleton turned out a brick, for he came to the party and admitted that he would have been a poor husband for May Fielding, saying, "Friends, one and all, my house is very lonely to-night. I've not so much as a cricket on my hearth. I have scared them all away. Be gracious to me; let me join this happy party!" This was at Peerybingle's house, and it was a very lively party indeed, for even blind Bertha, who had been told by May how poor old Caleb was, could now rejoice at the home-coming of her brother, who would put them out of want; and John Peerybingle, the carrier, nearly whisked Dot off her legs as they danced about the room, while the Cricket on the Hearth chirruped louder than ever!

THE NEXT STORIES OF FAMOUS BOOKS ARE ON PAGE 2431

A FAMOUS POEM BY ROBERT BROWNING

IN the extremely spirited poem entitled "How They Brought the Good News from Ghent to Aix," the detail of which is so accurate, the whole picture so vivid, that we might easily imagine it to be the description of an actual episode in history, we see how the poet's imagination can create a living picture without the help of facts. For Robert Browning, in writing the poem, had no historical episode in mind, and really sought, by the art of verse, to suggest the rhythmic movement of a fine horse at a gallop. This he does to perfection, and even in this respect the poem is an effort of pure imagination, as the poet wrote it on a boat off the coast of Africa!

HOW THEY BROUGHT THE GOOD NEWS

CONTINUED FROM 2157

I SPRANG to the stirrup, and Joris, and he;
I galloped, Dirck galloped, we galloped all three.
"Good speed!" cried the watch, as the gate-bolts undrew;
"Speed!" echoed the wall to us galloping through.
Behind shut the postern, the lights sank to rest,
And into the midnight we galloped abreast.

Not a word to each other; we kept the great pace
Neck by neck, stride by stride, never changing our place;
I turned in my saddle and made its girths tight,
Then shortened each stirrup, and set the pique right, [the bit,
Rebuckled the cheek-strap, chained slacker
Nor galloped less steadily Roland a whit.

'Twas moonset at starting; but, while we drew near [clear.
Lokeren, the cocks crew and twilight dawned
At Boom a great yellow star came out to see;
At Düffeld, 'twas morning as plain as could be.
And from Mecheln church-steeple we heard the half-chime, [time!"
So Joris broke silence with: "Yet there is

At Aerschot, up leaped of a sudden the sun,
And against him the cattle stood black every one,
To stare through the mist at us galloping past;
And I saw my stout galloper, Roland, at last,
With resolute shoulders each butting away
The haze, as some bluff river headland its spray.

And his low head and crest, just one sharp ear bent back
For my voice, and the other pricked out on his track; [glance
And one eye's black intelligence—ever that
O'er its white edge at me, his own master, askance!
And the thick, heavy spume-flakes which aye and anon
His fierce lips shook upwards in galloping on

By Hasselt, Dirck groaned; and cried Joris, "Stay spur!
Your Roos galloped bravely, the fault's not in her,
We'll remember at Aix"—for one heard the quick wheeze
Of her chest, saw the stretched neck, and staggering knees,
And sunk tail, and horrible heave of the flank,
As down on her haunches she shuddered and sank.

So we were left galloping, Joris and I,
Past Loos and past Tongres, no cloud in the sky.
The broad sun above laughed a pitiless laugh,
'Neath our foot broke the brittle, bright stubble like chaff;
Till over by Dalhem a dome-tower sprang white,
And "Gallop," cried Joris, "for Aix is in sight!"

"How they'll greet us!" and all in a moment his roan
Rolled neck and croup over, lay dead as a stone;
And there was my Roland to bear the whole weight
Of the news which alone could save Aix from her fate,
With his nostrils like pits full of blood to the brim, [rim.
And with circles of red for his eye-sockets'

Then I cast my loose buff-coat, each holster let fall,
Shook off both my jack-boots, let go belt and all,
Stood up in the stirrup, leaned, patted his ear,
Called my Roland his pet name, my horse without peer;
Clapped my hands, laughed and sang, any noise, bad or good, [stood.
Till at length into Aix Roland galloped and

And all I remember is friends flocking round
As I sate with his head 'twixt my knees on the ground,
And no voice but was praising this Roland of mine,
As I poured down his throat our last measure of wine,
Which (the burgesses voted by common consent)
Was no more than his due who brought good news from Ghent.

WARREN'S ADDRESS TO THE AMERICAN SOLDIERS

Was there ever a boy who did not thrill at "Warren's Address to the American Soldiers?" It was written by John Pierpont, and rings with the true American spirit.

Stand! The ground's your own, my braves!
  Will ye give it up to slaves?
Will ye look for greener graves?
  Hope ye mercy still?
What's the mercy despots feel?
Hear it in that battle-peal!
Read it on your bristling steel!
  Ask it,—ye who will.

Fear ye foes who kill for hire?
Will ye to your homes retire?
Look behind you! they're afire!
  And, before you, see
Who have done it!—From the vale
On they come! And will ye quail?—
Leaden rain and iron hail
  Let their welcome be!

In God of Battles trust!
Die we may,—and die we must;
But, O, where can dust to dust
  Be consigned so well,
As where Heaven its dews shall shed
On the martyred patriot's bed,
And the rocks shall raise their head
  Of his deeds to tell!

THE DESTRUCTION OF SENNACHERIB

Lord Byron wrote a number of beautiful poems, which he called "Hebrew Melodies," because he sought to express in them the feelings of the Hebrew people in their ancient days of struggle with the pagan nations around them. In this fine poem, which is one of the series, he describes with great power and imagination, and yet in plain, unaffected language, the defeat of the Assyrian king who sought in vain to conquer the people of Israel.

The Assyrian came down like the wolf on the fold,
And his cohorts were gleaming in purple and gold;
And the sheen of their spears was like stars on the sea,
When the blue wave rolls nightly on deep Galilee.

Like the leaves of the forest when summer is green,
That host with their banners at sunset were seen:
Like the leaves of the forest when autumn hath blown,
That host on the morrow lay wither'd and strown!

For the Angel of Death spread his wings on the blast,
And breathed on the face of the foe as he pass'd;
And the eyes of the sleepers wax'd deadly and chill,
And their hearts but once heaved, and for ever grew still!

And there lay the steed with his nostril all wide,
But through it there roll'd not the breath of his pride;
And the foam of his gasping lay white on the turf,
And cold as the spray of the rock-beating surf.

And there lay the rider, distorted and pale,
With the dew on his brow, and the rust on his mail;
And the tents were all silent, the banners alone,
The lances unlifted, the trumpet unblown.

And the widows of Ashur are loud in their wail,
And the idols are broke in the temple of Baal;
And the might of the Gentile, unsmote by the sword,
Hath melted like snow in the glance of the Lord!

THE LEAVES AND THE WIND

"Come little leaves," said the wind one day,
  "Come o'er the meadows with me and play;
Put on your dresses of red and gold,
Summer is gone, and the days grow cold."

Soon as the leaves heard the wind's loud call,
Down they came fluttering, one and all;
Over the brown fields they danced and flew.
Singing the soft little songs that they knew.

"Cricket, good-bye, we've been friends so long!
Little brook, sing us your farewell song!
Say you are sorry to see us go:
Ah! you will miss us, right well we know."

"Dear little lambs, in your fleecy fold,
Mother will keep you from harm and cold;
Fondly we've watched you in vale and glade;
Say, will you dream of our loving shade?"

Dancing and whirling, the little leaves went;
Winter had called them, and they were content.
Soon fast asleep in their earthy beds,
The snow laid a coverlet over their heads.

— George Cooper.

SERENADE

This beautiful little "Serenade," was written by our well-loved poet, Henry Wadsworth Longfellow, and has been put to music.

Stars of the summer night!
  Far in yon azure deeps,
Hide, hide your golden light!
  She sleeps!
My lady sleeps!
  Sleeps!

Moon of the summer night!
  Far down yon western steeps,
Sink, sink in silver light!
  She sleeps!
My lady sleeps!
  Sleeps!

Wind of the summer night!
  Where yonder woodbine creeps,
Fold, fold thy pinions light!
  She sleeps!
My lady sleeps!
  Sleeps!

Dreams of the summer night!
  Tell her, her lover keeps
Watch! while in slumbers light
  She sleeps!
My lady sleeps!
  Sleeps!

SHERIDAN'S RIDE

The swing and the gallop of this stirring poem, by T. Buchanan Read, takes us off our feet, and is a great favourite of American school children.

Up from the South at break of day
Bringing to Winchester fresh dismay,
The affrighted air with a shudder bore,
Like a herald in haste, to the chieftain's door,
The terrible grumble, and rumble, and roar,
Telling the battle was on once more—
And Sheridan twenty miles away.
And wider still those billows of war
Thundered along the horizon's bar ;
And louder yet into Winchester rolled
The roar of that red sea uncontrolled,
Making the blood of the listener cold,
As he thought of the stake in that fiery fray—
And Sheridan twenty miles away.

But there is a road from Winchester town,
A good, broad highway leading down ;
And there, through the flush of the morning light,
A steed as black as the steeds of night
Was seen to pass as with eagle flight ;
As if he knew the terrible need,
He stretched away with his utmost speed ;
Hills rose and fell ; but his heart was gay,
With Sheridan fifteen miles away.

Still spring from those swift hoofs, thundering South,
The dust, like smoke from the cannon's mouth,
Or the trail of a comet, sweeping faster and faster,
Foreboding to traitors the doom of disaster.
The heart of the steed and the heart of the master,
Were beating like prisoners assaulting their walls,
Impatient to be where the battlefield calls ;
Every nerve of the charger was strained to full play,
With Sheridan only ten miles away.

Under his spurning feet the road,
Like an arrowy Alpine river flowed,
And the landscape sped away behind
Like an ocean flying before the wind,
And the steed, like a bark fed with furnace fire,
Swept on, with his wild eye full of fire.
But lo! He is nearing his heart's desire :
He is snuffing the smoke of the roaring fray,
With Sheridan only five miles away.

The first that the general saw were the groups
Of stragglers, and then the retreating troops.
What was done—what to do? A glance told him both.
Then, striking his spurs, with a terrible oath
He dashed down the line, 'mid a storm of huzzas,
And the wave of retreat checked its course there, because
The sight of the master compelled it to pause.
With foam and with dust the black charger was grey ;
By the flash of his eye, and the red nostrils' play,
He seemed to the whole great army to say :
"I have brought you Sheridan all the way
From Winchester down to save the day."

Hurrah! hurrah for Sheridan!
Hurrah! hurrah for horse and man!
And when their statues are placed on high,
Under the dome of the Union sky,
The American soldiers' Temple of Fame,
There, with the glorious general's name,
Be it said, in letters both bold and bright :
"Here is the steed that saved the day,
By carrying Sheridan into the fight,
From Winchester, twenty miles away!"

THE DEATH OF NAPOLEON

Wild was the night, yet a wilder night
Hung around the soldier's pillow;
In his bosom there waged a fiercer fight
Than the fight on the wrathful billow.

A few fond mourners were kneeling by,
The few that his stern heart cherished;
They knew, by his glazed and unearthly eye,
That life had nearly perished.

They knew by his awful and kingly look,
By the order hastily spoken,
That he dreamed of days when the nations shook,
And the nations' hosts were broken.

He dreamed that the Frenchman's sword still slew,
And triumphed the Frenchman's eagle,
And the struggling Austrian fled anew,
Like the hare before the beagle.

The bearded Russian he scourged again,
The Prussian's camp was routed,
And again on the hills of haughty Spain
His mighty armies shouted.

Over Egypt's sands, over Alpine snows,
At the pyramids, at the mountain,
Where the wave of the lordly Danube flows,
And by the Italian fountain,

On the snowy cliffs where mountain streams
Dash by the Switzer's dwelling,
He led again, in his dying dreams,
His hosts, the broad earth quelling.

Again Marengo's field was won,
And Jena's bloody battle;
Again the world was overrun,
Made pale at his cannon's rattle.

He died at the close of that darksome day,
A day that shall live in story;
In the rocky land they placed his clay,
"And left him alone with his glory."

—Isaac McLellan.

Grow old along with me!
The best is yet to be,
The last of life, for which the first was made:
Our times are in his hand
Who saith "A whole I plann'd.
Youth shows but half; trust God: see all nor be afraid!"

—Robert Browning.

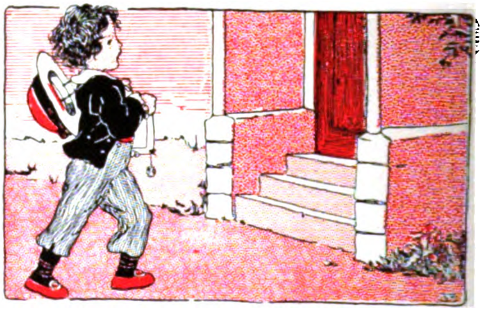
LITTLE VERSES FOR VERY LITTLE PEOPLE

Jim and George were two great lords,
They fought all in a churn;
And when that Jim got George by the nose,
Then George began to girn.

Elizabeth, Elspeth, Betsy, and Bess,
They all went together to seek a bird's nest,
They found a bird's nest with five eggs in,
They all took one, and left four in.

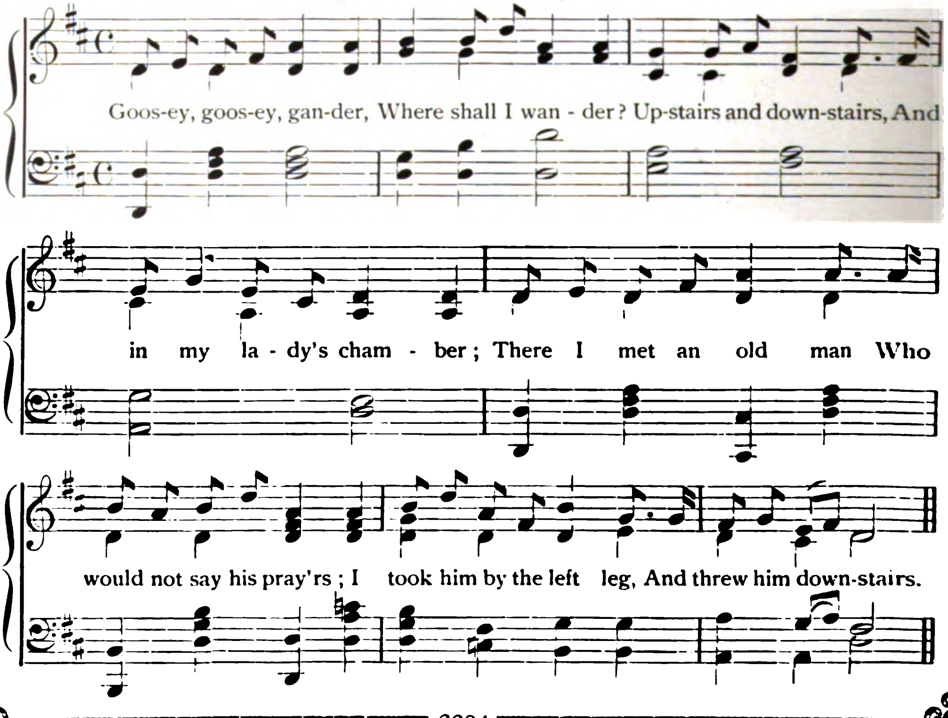
The King of France, and four thousand men,
They drew their swords and put them up again.

A diller, a dollar,
A ten o'clock scholar,
What makes you come so soon?
You used to come at ten o'clock,
But now you come at noon.



I had a little nut-tree, nothing would it bear
But a silver nutmeg and a golden pear.
The King of Spain's daughter came to visit me,
And all was because of my little nut-tree.
I skipped over water, I danced over sea,
And all the birds in the air couldn't catch me.

GOOSEY, GOOSEY, GANDER


Goos-ey, goos-ey, gan-der, Where shall I wan - der? Up-stairs and down-stairs, And
in my la - dy's cham - ber; There I met an old man Who
would not say his pray'rs; I took him by the left leg, And threw him down-stairs.

MY FATHER HE DIED AND I CANT TELL YOU HOW

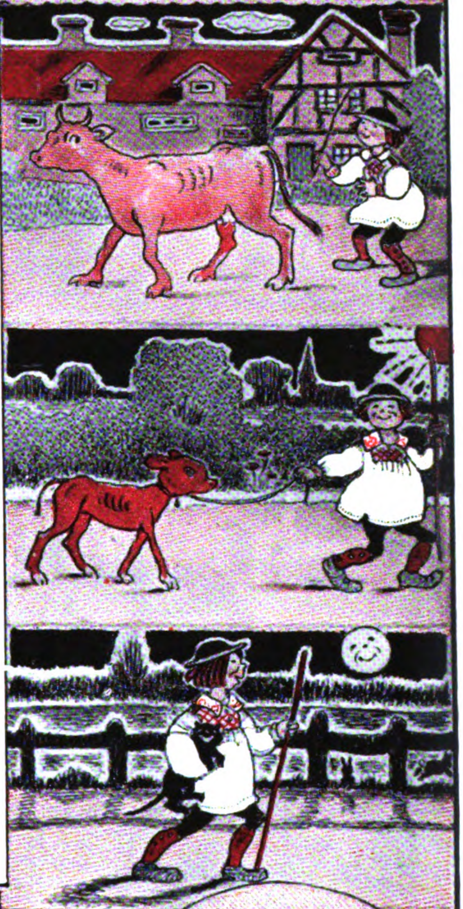
My father, he died, but I can't tell you how;
He left me six horses to drive in my plough:
With my wing, wang, waddle, oh,
Jack sing, saddle, oh,
Blowsey boys, bubble, oh,
Under the broom.

I sold my six horses, and I bought me a cow;
I'd fain have made my fortune, but did not know how:
With my wing, wang, waddle, oh.
Jack sing, saddle, oh,
Blowsey boys, bubble, oh,
Under the broom.

I sold my cow, and I bought me a calf;
I'd fain have made a fortune, but lost the best half:
With my wing, wang, waddle, oh,
Jack sing, saddle, oh,
Blowsey boys, bubble, oh,
Under the broom.

I sold my calf, and I bought me a cat;
A pretty thing she was, in my chimney corner sat:
With my wing, wang, waddle, oh,
Jack sing, saddle, oh,
Blowsey boys, bubble, oh,
Under the broom.

I sold my cat, and bought me a mouse;
He carried fire in his tail, and burnt down my house:
With my wing, wang, waddle, oh,
Jack sing, saddle, oh,
Blowsey boys, bubble, oh,
Under the broom.



THE VOICE OF THE CUCKOO CAME FROM THE FIRE

The two brothers, Scrub and Spare, were sitting before the blazing fire, when suddenly from out the flames they heard the spring bird's voice saying "Cuckoo! cuckoo!" "It is something bad," said Scrub, terribly frightened.

THE COBBLERS & THE CUCKOO

A Tale from Granny's Wonderful Chair

CONTINUED FROM 2148

Once upon a time there stood in the midst of a bleak moor, in the North Country, a certain village; all its inhabitants were poor, for their fields were barren, and they had little trade. But the poorest of them all were two brothers called Scrub and Spare, who followed the cobbler's craft, and had but one stall between them. It was a hut built of clay and wattles. There they worked in most brotherly friendship, though with little encouragement.

The people of that village were not extravagant in shoes, and better cobblers than Scrub and Spare might be found. Nevertheless, Scrub and Spare managed to live between their own trade, a small barley field, and a cottage garden, till one unlucky day when a new cobbler arrived in the village. He had lived in the capital city of the kingdom, and, by his own account, cobbled for the queen and the princesses. His awls were sharp, his lasts were new; he set up his stall in a neat cottage with two windows.

The villagers soon found out that one patch of his would outwear two of the brothers'. In short, all the mending left Scrub and Spare, and went to the new cobbler. So the brothers were poor that winter, and when Christmas came they had nothing to feast on but a barley loaf, a piece of musty bacon, and some small beer of their own brewing. But they made a great fire of logs, which crackled and blazed with red embers, and in high glee the cobblers sat down to their beer and bacon. The door was shut, for there was nothing but cold moonlight and snow outside; but the hut, strewn with fir boughs, and ornamented with holly, looked cheerful as the ruddy blaze flared up and rejoiced their hearts.

"Long life and good fortune to ourselves, brother!" said Spare. "I hope you will drink that toast, and may we never have a worse fire on Christmas—but what is that?"

Spare set down the drinking-horn, and the brothers listened astonished, for out of the blazing root they heard "Cuckoo! cuckoo!" as plain as ever the spring bird's voice came over the moor on a May morning.

"It is something bad," said Scrub, terribly frightened.

"May be not," said Spare.

And out of the deep hole at the side which the fire had not reached flew a large grey cuckoo, and lit on the table before them. Much as the cobblers had been surprised, they were still more so when the bird began to speak.

"Good gentlemen," it said slowly, "can you tell me what season this is?"

"It's Christmas," answered Spare.

"Then a merry Christmas to you!" said the cuckoo. "I went to sleep in the hollow of that old root one evening last summer, and never woke till the heat of your fire made me think it was summer again; but now, since you have burned my lodging, let me stay in your hut till the spring comes round—I only want a hole to sleep in—and when I go on my travels next summer be assured that I will bring you some present for your trouble."

"Stay, and welcome," said Spare. "I'll make you a good warm hole in the thatch. But you must be hungry after that long sleep. Here is a slice of barley bread. Come, help us to keep Christmas!"

The cuckoo ate up the slice, drank water from the brown jug—for he would take no beer—and flew into a snug hole which Spare scooped for him in the thatch of the hut. So the snow melted, the heavy rains came, the cold grew less, the days lengthened, and one sunny morning the brothers were awakened

SCRUB AND FAIRFEATHER HAD A GRAND WEDDING FEAST, AT WHICH ALL THE VILLAGE DANCED by the cuckoo shouting its own cry to let them know that at last the spring had come.

"Now," said the bird, "I am going on my travels over the world to tell men of the spring. There is no country where trees bud or flowers bloom that I will not cry in before the year goes round. Give me another slice of barley bread to keep me on my journey, and tell me what present I shall bring you at the end of the twelve months."

"Good Master Cuckoo," said Scrub, "a diamond or pearl would help such poor men as my brother and I to provide something better than barley bread for your next entertainment."

"I know nothing of diamonds or pearls," said the cuckoo; "they are in the hearts of rocks and the sands of rivers. My knowledge is only of that which grows on the earth. But there are two trees hard by the well that lies at the world's end. One of them is called the golden tree, for its leaves are all of beaten gold. As for the other, it is always green, like a laurel. Some call it the wise, and some the merry tree. Its leaves never fall, but they that get one of them keep a blithe heart in spite of all misfortunes, and can make themselves as merry in a poor hut as in a handsome palace."

"Good Master Cuckoo, bring me a leaf off that tree!" cried Spare.

"Now, brother, don't be foolish!" said Scrub. "Think of the leaves of beaten gold! Dear Master Cuckoo, bring me one of them."

Before another word could be spoken, the cuckoo had flown.

The brothers were poorer than ever that year; nobody would send them a single shoe to mend. The new cobbler said, in scorn, they should come to be his apprentices; and Scrub and Spare would have left the village but for their barley field, their cabbage garden, and a maid called Fairfeather, whom both the cobblers had courted for more than seven years.

At the end of the winter Scrub and Spare had grown so poor and ragged that Fairfeather thought them beneath her notice. Old neighbours forgot to invite them to wedding feasts or merry-makings; and they thought the cuckoo had forgotten them too, when at day-break, on the first of April, they heard a hard beak knocking at their door, and a voice crying:

"Cuckoo! cuckoo! Let me in."

Spare ran to open the door, and in came the cuckoo, carrying on one side of his bill a golden leaf, larger than that of any tree in the North Country; and in the other, one like that of the common laurel, only it had a fresher green.

"Here!" it said, giving the gold to Scrub and the green to Spare.

So much gold had never been in the cobbler's hands before, and he could not help exulting over his brother.

"See the wisdom of my choice," he said, holding up the large leaf of gold. "As for yours, as good might be plucked from any hedge. I wonder a sensible bird should carry the like so far."

"Good Master Cobbler," cried the cuckoo, finishing the slice, "your conclusions are more hasty than courteous. If your brother be disappointed this time, I go on the same journey every year, and, for your hospitable entertainment, will think it no trouble to bring each of you whichever leaf you desire."

"Darling cuckoo," cried Scrub, "bring me a golden one."

And Spare, looking up from the green leaf on which he gazed, said:

"Be sure to bring me one from the merry tree."

And away flew the cuckoo once again.

Scrub vowed that his brother was not fit to live with a respectable man; and taking his lasts, his awls, and his golden leaf, he left the wattle hut, and went to tell the villagers.

They were astonished at the folly of Spare, and charmed with Scrub's good sense, particularly when he showed them the golden leaf, and told them that the cuckoo would bring him one every spring. The new cobbler immediately took him into partnership; the greatest people sent him their shoes to mend; Fairfeather smiled graciously upon him, and in the course of that summer they were married, with a grand wedding feast, at which the whole village danced, except Spare, who was not invited.

As for Scrub, he established himself with Fairfeather in a cottage close by that of the new cobbler, and quite as fine. There he mended shoes to everybody's satisfaction, had a scarlet coat for holidays, and a fat goose for dinner every wedding-day anniversary. Spare lived on in the old hut and worked in the cabbage garden. Every day his coat grew more ragged, and the hut more weather-beaten; but people remarked that he never looked sad or sour; and the wonder was that, from the time they began to keep his company, the tinker grew kinder to the poor ass with which he travelled the country, the beggar-boy kept out of mischief, and the old woman was never cross to her cat or angry with the children.

I know not how many years passed in this manner, when a certain great lord, who owned that village, came to the neighbourhood. His castle was ancient and strong, with high towers and a deep moat. All the country, as far as one could see from the highest turret, belonged to this lord; but he had not been there for twenty years, and would not have come then, only he was melancholy.

The cause of his grief and sorrow was that he had been Prime Minister at court, and in high favour, till somebody told the Crown Prince that he had spoken disrespectfully concerning the turning out of his Royal Highness's toes, whereon the North Country lord was turned out of office, and banished to his own estate. There he lived for some weeks in very bad temper; but one day in the harvest time his lordship chanced to meet Spare gathering watercresses at a meadow stream, and fell into talk.

How it was nobody could tell, but from the hour of that discourse the great lord cast away his melancholy, and went about with a noble train, making merry in his hall, where all travellers were entertained and all the poor were welcome.

This strange story soon spread through the North Country, and a great company came to the cobbler's hut—rich men who had lost their money, poor men who had lost their friends, beauties who had grown old, wits who had gone out of fashion—all came to talk with Spare, and, whatever their troubles, all went home merry. The rich gave him presents, the poor gave him thanks.

By this time his fame had reached the court. There were a great many discontented people there besides the King, who had lately fallen into ill-humour because a neighbouring princess, with seven islands for her dowry, would not marry his eldest son. So a royal messenger was sent to Spare, with a command that he should go to court.

"To-morrow is the first of April," said Spare, "and I will go with you two hours after sunrise."

The messenger lodged all night at the castle, and the cuckoo came at sunrise with the merry leaf.

"Court is a fine place," he said, when the cobbler told him he was going; "but I cannot go there—they would lay snares and catch me. So be careful of the leaves I have brought you, and give me a farewell slice of barley bread."

Spare was sorry to part with the cuckoo, but he gave him a thick slice, and, having sewed up the leaves in the lining of his leather doublet, he set out with the messenger on his way to the royal court.

His coming caused great surprise; but scarce had his Majesty conversed with him half an hour when the princess and her seven islands were forgotten, and orders given that a feast for all comers should be spread in the banquet hall. The princes of the blood, the great lords and ladies, Ministers of State, and judges of the land, after that discoursed with Spare, and the more they talked the lighter grew their hearts, so that such changes had never been seen.

As for Spare, he had a chamber assigned him in the palace, and a seat at the King's table; one sent him rich robes and another costly jewels; but in the midst of all his grandeur he still wore the leathern doublet, which the palace servants thought remarkably mean. One day the King's attention being drawn to it by the chief page, his Majesty inquired why Spare didn't give it to a beggar. But the cobbler said:

"High and mighty monarch, this doublet was with me before silk and velvet came—I find it easier to wear than the court cut; moreover, it serves to keep me humble, by recalling the days when it was my holiday garment."

The King thought this a wise speech, and commanded that no one should find fault with the leathern doublet. So things went, and Spare prospered at court until the day when he lost his doublet, of which we read in that part of this book beginning on page 2372.

STORIES OF GREECE AND ROME

There are many stories of ancient Greece and Rome that will be told over and over again so long as mankind loves to listen to the telling of tales. These stories are sometimes true, or historical, and sometimes imaginary, or legendary; but, truth or fable, they are always full of interest and charm. We shall read both kinds of tales from time to time, and we cannot fail to profit by them, for they always teach as well as entertain, which all good stories should do.

THE FOOLISH EMPEROR & HIS FOWLS

In old days, the most important person in the world was the Roman Emperor. There are plenty of kings and emperors nowadays, and there is plenty for them to do in making good laws, and seeing that people keep them.

But the Roman Emperor used to be more important, because he had to look after everyone in his empire, which was a very big one indeed. But once there was an emperor whose name was Honorius, and that was just at a time when the whole empire was in very great danger.

But Honorius paid no heed to that; the only things he thought really interesting were cocks and hens and chickens! So when his Ministers or great officers of the court or the army came to him to ask what they were to do, he would say: "Go away and wait. Can't you see that I have to feed my chickens?"

Nobody was sorry when the Emperor died and was no longer the most important person in the world.

THE TALE OF THE DUTIFUL SONS

In the ancient city of Argos there abode with their mother two young men whose names were Cleobis and Bito, who were famous through the land for their skill in all manly sports.

Now, there was a festival in honour of the greatest of the goddesses, Hera, the wife of Zeus, and it behoved the mother of those twain that she should be drawn in a chariot to the temple of the goddess.

But when there was tarrying of the oxen which were to have drawn the chariot after the Greek manner, her two sons made haste and yoked themselves to the car, and drew it to the temple, which was many miles away, and all men's mouths were full of the praises of the young men.

Then was their mother's heart filled with joy, and she prayed to the goddess saying: "Queen of gods and men, grant to my two noble sons the greatest blessing thou canst bestow on mortal man."

But when the festival was finished, Cleobis and Bito lay down in the temple to sleep, and behold, in the morning the spirits had departed out of their bodies, and this was accounted the answer of the goddess to the prayer of their mother; because to mortals the gods can grant no greater boon than to take them to dwell with the immortals.

THE SACRIFICE OF MARCUS CURTIUS

Once on a time in ancient Rome it befell that many troubles came upon the state, and men said that the gods must be wroth; but when one day there was a terrible noise of grinding and roaring and a great chasm opened in the ground, they were sure of it.

Therefore they consulted an oracle, to learn how the anger of the gods might be appeased, and the oracle made answer: "When Rome's greatest treasure is cast into the chasm, it will be closed again, for a sign that the gods are angry no more." But none could tell what the greatest treasure was, so there was great lamentation.

Then a young and valiant soldier, whose name was Marcus Curtius, said: "Surely Rome has no greater treasure than the lives of the citizens who are willing to die for their country!" So he arrayed himself in his armour, and mounted his war-horse, and leaped into the chasm, and then the chasm closed, and was henceforth called Lake Curtius, for Rome could make no greater sacrifice than the willing death of her noblest son.

A WARNING TO DANCERS

There was a certain rich man called Clisthenes who had a fair daughter, and from all Greece came wooers, among whom Hippoclides found favour.

Then Clisthenes gave a great feast to all the suitors, declaring that thereafter he would make known which of them he had chosen for his daughter. But when they waxed merry with feasting, Hippoclides began to dance, and when he leaped on a table and began to walk on his hands, Clisthenes cried out: "Have a care, Hippoclides! You are dancing away your marriage." But "What cares Hippoclides?" quoth he, upside down, with wagging legs. So Hippoclides was sent packing, and another suitor won the coveted prize.

THE WISEST MAID IN WESSEX

IN the ancient days there was a King of Wessex whose name was Ina. He was a tall, brave, handsome man, but he had a great failing. The least thing vexed him and threw him into a sudden fit of wild anger. Knowing this, he resolved to marry a wise maiden who could restrain him and govern him. One afternoon he rode out from Winchester into the great forest, and, feeling thirsty, he stopped at a woodman's hut to get a drink of milk. The woodman's pretty daughter Edith brought him some milk, and when he gave her back the mug he said:

"I am King Ina of Wessex. Empty all the seas of the world with this mug, and I will make you my Queen."

Edith went into the hut, and brought out a handful of tow, and gave it to King Ina, saying merrily:

"Stop up with this tow all the rivers, and I will do as you wish."

"You are the girl I've been looking for," said King Ina.

And he set her upon his horse, and led her to his palace at Winchester. But just before they were married Edith said to him:

"You know you have a very hasty temper. So promise that if you get angry with me and send me out of the palace you will let me take a parting gift away with me."

King Ina, of course, agreed to this. As they were sitting at supper one night, Ina was offended by some good advice which his wife gave him, and he cried:

"You interfere too much in my affairs. To-morrow you go back with your father to the hut."

When her husband's back was turned, she put a drug into the mead he was drinking, and this made him fall into a deep sleep, and then she had him carried softly to the hut in the forest.

"Who brought me here?" he shouted, on awakening the next morning.

"I did, dearest," said Queen Edith. "You are my parting gift."

"Ah!" said King Ina, kissing her. "I did well in marrying the prettiest maid in Wessex, and also the wisest!"

THE FAIRY MAID OF VAN LAKE

A SHEPHERD lad from Mothvey was tending his sheep one afternoon beside Van Lake, in the Black Mountains of Wales, when three fairy maids came out of the water and began to play on the grass. All of them were beautiful with a beauty never seen on a mortal face, but the youngest was the loveliest; and the shepherd fell madly in love with her, and won her as his bride. On the wedding-day the fairy maid came out of Van Lake, and brought with her, as a dowry, three cows, two oxen, and a bull, and the marriage was joyfully celebrated at Mothvey Church.

"Now mind," said the fairy maid to her husband, "if ever you strike me three times without cause, I shall have to return to Van Lake."

The shepherd said he never would dream of touching her, and they lived happily together, and three little boys were born to them. But when the shepherd asked his wife to go for a horse for them to ride to the christening, she quite forgot to do so, and, without thinking anything at all about her threat, he slapped her on the shoulder, telling her to do as she had been bidden.

"That's one," said the fairy maid.

Soon afterwards they went to a wedding, and instead of merrymaking the fairy maid cried all the time, just as though she were at a funeral and everybody was sad.

"Why do you cry?" said the shepherd, slapping her on the shoulder.

"Because the marriage will prove unhappy," she replied. "And mind! You have now struck me twice."

The shepherd became very careful, for he certainly was very anxious not to lose his wife, but later, at a funeral, his wife shocked everybody by laughing and dancing. Clean forgetting himself, the shepherd tapped her, saying:

"Is this a time for rejoicing?"

"Yes," said the fairy maid. "The baby has escaped the sorrows of earth and entered the Kingdom of Heaven. But that's the third blow. Farewell!"

As she entered Van Lake her cattle followed her. When her three sons grew up, however, the fairy maid appeared again, and gave them the gift of healing, and they all became famous physicians.

THE FABLES OF ÆSOP THE SLAVE

THE FARMER AND HIS SONS

An old farmer lay very ill, and it was soon seen that he was going to die. So he called his two sons, and said:

"My boys, all the fortune that I have to leave you is my farm and fields, which I give to you in equal shares; but you are on no account to let the ground pass out of your own occupation, for whatever treasure I have besides lies buried somewhere in the ground within a foot or two of the surface."

The two sons thought that their father was talking about some money that he had buried; so after his death they set to work and carefully dug every inch of the ground. They found no buried treasure, but the result of their digging was that the ground was so well stirred and turned over that it produced splendid crops, and the two sons were well repaid for their trouble.

The way to get rich is to work hard.

THE FOX AND THE MASK

A fox was walking along one day when, by the roadside, he found a mask, carved in the shape of a man's face. He picked it up and looked at it carefully, then he turned it over and found that it was hollow inside. The fox then laughed, and said: "What a pity it is that such a wise-looking head should have no brains inside it!"

Good looks are worth nothing without good sense.

THE BOYS AND THE FROGS

A party of mischievous boys were playing in a field near a pond. When they got tired of running about, they gathered at the side of the pond and amused themselves by throwing stones at the unfortunate frogs as often as they showed their heads above water.

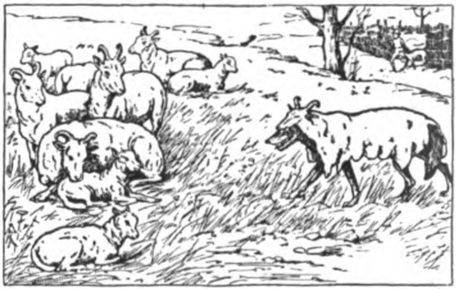
At last an old frog put his head out, and said: "Boys, you don't seem to remember that, though this may be play to you, it is death to us."

Never play games which are cruel.

THE WOLF IN SHEEP'S CLOTHING

A wolf one day dressed himself in the skin of a sheep, and so was able to creep in among the flock and kill and eat a great many of them.

One day the shepherd found him out, and, tying a rope about his neck, hung him to the branch of a tree by the roadside. Some other shepherds passing by asked the man what he meant by hanging one of his sheep; but when he showed them that it was really a wolf dressed up as a sheep, they all agreed that the animal deserved his fate



Hypocrites always get found out.

A BOX OF GOOD LUCK

A GENTLEMAN in France was walking one day through the streets when he saw a pretty little " twist " in a baker's shop-window.

"That is the very thing to tempt my poor little girl," he said, and went into the shop to buy the pretty bread for his invalid child.

While he was waiting for his change, a little mite of a boy, six or seven years of age, very poor, but neatly dressed, entered the shop.

" Madame," he said, to the baker's wife, " mamma has sent me here to fetch a loaf."

" Have you any money ? " she said, with a smile, placing an immense loaf in the little arms.

" No, madame ; but mamma says she will come and speak to you to-morrow."

" All right; run away with your loaf."

" Thank you, madame," said the child.

The gentleman received his change, and was just about to leave the shop when he discovered the little boy still standing behind him.

" Hallo ! " said the baker's wife, " are you still there ? What is the matter ? Doesn't the loaf suit you ? "

" Oh, yes ! " replied the boy.

" Then carry it to your mother," said the woman. " If you are late, she will scold you for loitering."

The child did not seem to hear. Something held him spellbound. The baker's wife went up to him and tapped his cheek.

"Come,what are you dreaming about?"

" Madame," said the child, " who is it sings here ? "

" No one."

" Yes ; listen ! "

The baker's wife and the gentleman both listened, but could hear no singing, only the usual refrain of some crickets, which are always to be found in bakeries.

" It is a little bird," whispered the boy ; " or perhaps the bread sings in the oven, like the apples."

The baker's wife laughed.

" That is nothing but the crickets, my little man."

" Crickets ! " cried the boy. " Are they really crickets ? " He blushed suddenly scarlet. " Oh, madame," he said eagerly, " I should be so happy if you would only give me a cricket ! "

" Why, what do you want with a cricket ? I should be glad if I could give you all I have got in the house."

" Oh, madame, only one, if you will ! " said the child, putting his hands together above his loaf. " Someone told me crickets bring good luck to houses ; perhaps if we had one at home, my poor mamma, who is so sad and ill, would never cry any more."

The gentleman looked at the baker's wife. She was wiping a tear away.

" And why does your mother cry, little man ? " he asked gently.

" It is the bills," answered the child. " My daddie is dead, and my mother has to work hard because of these bills."

The gentleman took the little boy in his arms and embraced him. The woman went to the bakery ; she was afraid to touch the crickets herself, but she got her husband to catch four and put them in a box with holes in the lid for them to breath through ; then she brought the box to the child, who received it with a kind of joyful awe. He went out like someone in a dream.

When he was gone, " Poor little chap," said the gentleman and the woman together. She went to her desk, opened the book at the page where the widow's account for bread was written, and, drawing a pen through it, wrote at the bottom " Paid."

The gentleman took out all his silver, and, passing it to the baker's wife, said: " Will you place this money in the receipted bill and send it to the poor widow, with a note saying that one day her child will certainly grow up to be a joy to her and a help ? "

This was done. A long-legged baker's boy set off at a good trot, and arrived at the sad and humble home long before the little mite with his big loaf and his box of crickets.

When the child did arrive, he found his mother (for the first time since his father's death) joyous and gay. Immediately he thought to himself : " It is the crickets."

And it is really quite certain that but for those crickets and his own good heart this happy change of fortune would never have taken place.

THE STEADFAST TIN SOLDIER

ONE day a little boy in Copenhagen was given twenty-five tin soldiers. Twenty-four were made exactly alike, from the same tin spoon; but the twenty-fifth was made with only one leg, as there was not enough tin left to finish him. Still, he was able to stand as steadfastly as his companions, and the little boy had a liking for him, and put him on a table close to a delightful paper castle. By the gate of the castle stood a dancing-girl, made out of paper, and she was so bewitchingly pretty that the tin soldier fell in love with her.

At midnight, when everybody in the house was fast asleep, all the toys woke up and began to play. The only two who did not move were the soldier and the dancing-girl. As he stood looking at her shyly, with loving eyes, an ugly Jack-in-the-box came and said:

"Keep your eyes to yourself, or you'll regret it to-morrow morning!"

The soldier made no reply; but in the morning, when he and the Jack-in-the-box were set by the open window, the soldier fell out. No doubt Jack-in-the-box pushed him. He landed head foremost in the street, but saved himself from being flattened out by driving his bayonet between two paving-stones. Two boys saw him, and said:

"Let us send this soldier for a sail."

It was raining heavily, and they made a paper boat, and put the soldier in it, and as he sailed along the gutter the boys ran by the side, clapping their hands. Suddenly the boat entered a dark tunnel, and began to rock dreadfully. A shudder ran through the tin soldier, but he stood steadfast, with his gun placed against his shoulder. A rat swam up and tried to seize him, but the current whirled the boat out of the tunnel into a canal. There it twisted round and round, and began to sink.

"Oh, this is the fault of that ugly Jack-in-the-box!" cried the soldier. "But if only I had my little dancing-girl beside me I would not mind."

The paper boat sank, and as the soldier fell through the water a great fish gobbled him up. How long he remained inside the fish he could not tell; but one day the light flashed upon him, and someone said:

"Why, this is my little tin soldier!"

It was the boy. He was watching the cook clean the fish which had been caught in the canal. The soldier was again placed beside the pretty dancing-girl, but before he could say a word the Jack-in-the-box pushed him down on the floor.

"Oh, this thing will never stand up straight!" said the boy.

And he threw the soldier into the fire. A breeze was blowing in from the street, and the dancing-girl swiftly rose up on it, and danced into the flames, and clasped the soldier lovingly, and perished with him.

THE SNOW GIRL OF SUNNY LAND

PROVENCE is a sunny land, where scarcely any snow ever falls. But one winter night a snow-storm raged there, and a farmer and his wife woke up early and found their house almost snowed up. They were an aged couple, and, having no children, they were rather sad and lonely.

"I will make a child out of this snow," said the wife. She moulded some snow by the gate into the figure of a little girl, and then, to her amazement, the figure followed her indoors and spoke.

"Mother," she said, "don't make a great fire in the room; I can't bear the heat."

The people for miles around came to see the Snow Girl. And as she was pretty and gentle the children liked her, and wanted her to play with them. During the winter she was very merry, but in the spring she became rather mournful.

She did not like the sunshine, and she used to run away from it, and hide in the shady depths of the forest. And what grieved her mother most was that she was always weeping. One summer evening her playmates made a bonfire, and danced round it, and as she did not join them they fetched her. At first the Snow Girl leaped about the fire as gaily as her companions, but when they tried to jump across the flames she vanished, and in the hands of the two boys who held her there remained only a drop of water.

RAPUNZEL'S GOLDEN LADDER

A YOUNG Prince was hunting one day in a forest in Germany, when he heard a girl singing sweetly and sadly to herself. He followed the sound, and came to a tower in which there was no door or stairs. As he stood among the trees, wondering where the entrance was, a Witch hobbled up and sang :

"Rapunzel ! Rapunzel !
Let down your hair."

A lovely maiden at once came to the window at the top of the tower, and unbound her golden tresses, and they were so long that they touched the ground, and the Witch slowly climbed up them.

"Ah," said the Prince, "I will use that golden ladder !"

When the Witch departed, he also sang :

"Rapunzel! Rapunzel!
Let down your hair."

Rapunzel did so, and he ascended. But oh, how startled she was when he appeared ! She had never seen a man before. The Witch had taken her from her parents when she was a baby, and put her in the tower, and there she had grown up all alone. The Prince talked to her so lovingly that her heart was soon won, and she promised to marry him.

"Now, dearest," said the Prince, when it grew dark, "I must find a silken ladder for you to escape by. I will bring it to-morrow when the Witch has gone away."

Unhappily, Rapunzel was very simple-minded. When the Witch came and climbed up her hair, she said :

"How long you take, granny ! The Prince climbs up in an instant."

"Ah," said the Prince, "I will use that golden ladder !"

"What !" said the Witch, raging with anger. "After all the trouble I have taken to keep you separate from the world, you let down your hair for a man to climb up ! You must die !"

Seizing a pair of scissors, she cut off Rapunzel's hair, and led her into a desert, and left her there to perish. The Witch then returned to the tower, and climbed up by means of the golden tresses, which she had tied round the window-bar.

"Rapunzel! Rapunzel!
Let down your hair,"

sang the Prince, as he came through the forest, carrying a silken ladder. Then, seeing the tresses, he gaily climbed up, and entered the room.

"Ah, ah!" shrieked the Witch, as she saw him looking around for Rapunzel. "The pretty little bird isn't in the nest. The cat has killed it, and the cat is going to scratch your eyes out."

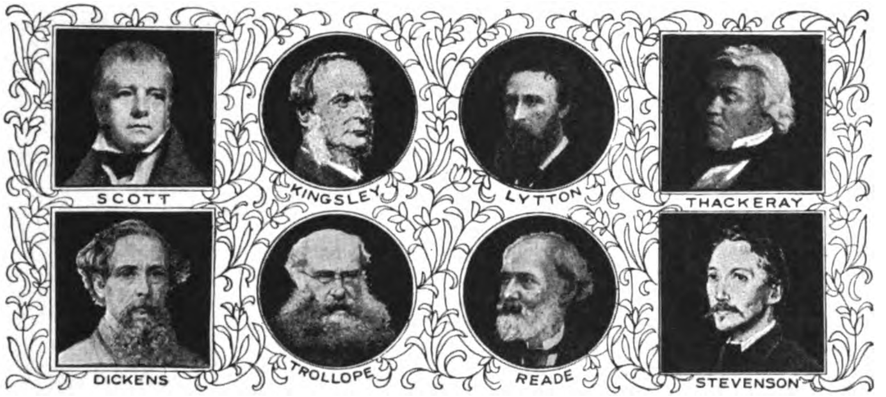
She pushed the Prince, and he tumbled out of the window, and fell on a bush, and the thorns pierced his eyes. After wandering blindly about the forest, he came to the desert, and heard Rapunzel singing sweetly and softly to herself.

He followed the sound, and she saw him, and ran up and fell upon his neck weeping, and two of her tears wetted his eyes, and he recovered his sight.

The bad old Witch, who had been watching from the top of the tower, saw the lovers meet, and she was so angry at their happiness that her rage choked her, and she died.

The Prince at once led Rapunzel to his father's kingdom, and there they were joyfully married in great splendour.

The next Stories begin on page 2369



THE GREAT STORY-TELLERS

FAMOUS BRITISH WRITERS OF THE LAST CENTURY

CONTINUED FROM 2121

THE last of the famous story-tellers about whom we read on page 1732 was Oliver Goldsmith, whose death occurred in the year 1774. Three years before that time a boy was born in Edinburgh who was to become the greatest of all our story-tellers. His name was Walter Scott, and his birthday was August 15, 1771. Though born in the eighteenth century, we do not consider Walter Scott as a novelist of that century, for he was only twenty-nine years of age when the nineteenth century began, and he had not yet written any of his famous stories.

It was, indeed, a remarkable, and in some respects a heroic, life that began that August day in one of the narrow streets of old Edinburgh, where the father of the new baby, who was fated to make his name illustrious, was a well-known member of the legal profession. This little Walter Scott, although an uncommonly healthy child, found his troubles begin soon enough, for when he was only some eighteen months old he lost the power of his right leg, and many years were to be spent by his anxious parents in trying everything that could be done to restore the use of his limb. Success attended their efforts in the end, and, although Walter was doomed to go lame through life, as he grew into lusty boyhood the use of his leg came back to him so well that he could even join with his playmates in the dangerous sport of climbing up the famous Castle Hill that stands proudly in the midst of his native town.

When he was eight years old, young Walter was sent to the High School, and from all accounts he did nothing to distinguish himself there, nor did he do much better at the University. His schoolmasters had very little hope that their lame pupil would ever make himself famous; but they were merely reckoning without the important knowledge that Walter was a genius, and therefore not to be judged by the rules by which ordinary people may be judged. But if Walter Scott learned little Latin and less Greek at the High School and at the University of Edinburgh, he had learned many things that were to prove even more useful to him in after life. His appetite for reading could never be satisfied, and he himself has told us that probably no boy of his age had read so much, but chiefly of the old legends and romances, as his imagination from the first was most keenly interested in everything of a romantic nature.

He had a friend who was also of like mind, and the two used to compose romances for each other's amusement, rehearsing their juvenile compositions aloud as they wandered among the solitary places of Arthur's Seat and Salisbury Crags, those picturesque hills that tower beyond historic Holyrood.

THE LAME SCHOOLBOY AND THE ROMANTIC TOWN IN WHICH HE LIVED

Edinburgh in those days was just the place to kindle the imagination of a romantic-minded boy, who would find at almost every turn among its grey and narrow streets, with their tall and sombre buildings, landmarks of Scotland's romantic history, many of which, in the great changes of the last half-century, have disappeared.

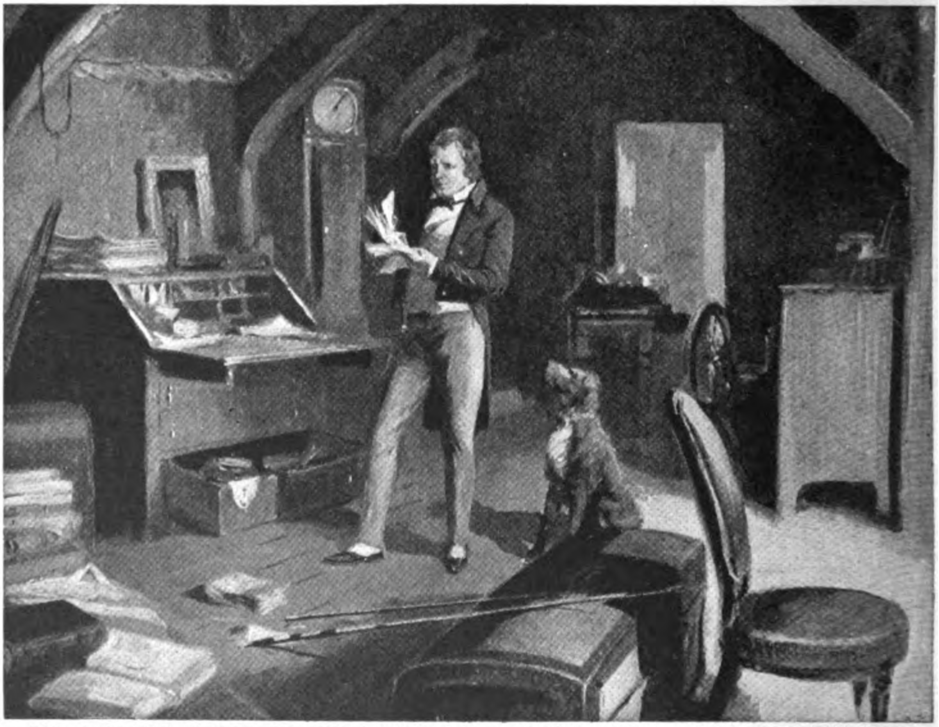
If Walter Scott was not a brilliant schoolboy nor a successful student, that must have been because his mind was roving in the fairy realms of old romance and history, for when the time came to open the gates into other realms of fancy, which could only be done by the key of foreign languages, he applied himself so well that he speedily learnt French and Italian, in order to read the romances written in these tongues. For poetry he had also a passion as a boy, and long legends in verse he could read with as keen a relish as a boy of to-day will read a stirring detective story.

When he was fourteen years of age, Walter Scott entered his father's office, and seven years later he was qualified as an advocate, but he did not possess those powers of oratory which are necessary for success in the highest ranks of law. He was only twenty-five when his first literary work appeared, in the shape of a book of ballads adapted from a German author.

HOW WALTER SCOTT BEGAN BY GATHERING OLD POEMS FOR HIS BOOKS

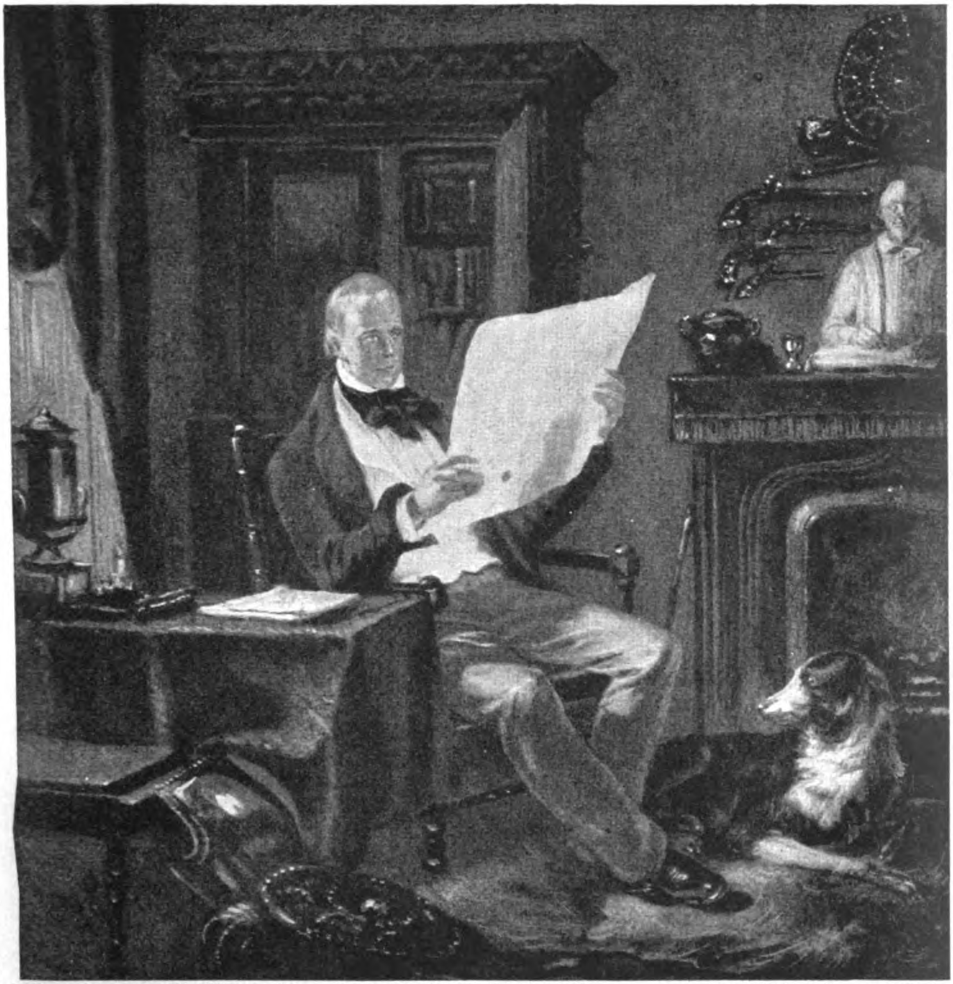
He was already at work, whenever he could get the opportunity, gathering legends and ballads among the old-fashioned folk of the Scottish borderland, from which part of the country his ancestors had come. And in the year 1802 the results of these gatherings of song and legend were seen when the first volume of his famous "Border Minstrelsy" was published.

Three years later his own original poem, "The Lay of the Last Minstrel," made his name famous throughout the land. It was thus, as a teller of stories in verse, that Walter Scott first made



SIR WALTER SCOTT FINDING THE LOST STORY THAT MADE HIM FAMOUS

THE AUTHOR OF "WAVERLEY" AT HIS OWN FIRESIDE



This picture, by Sir William Allan, shows Sir Walter Scott reading a proclamation of Mary Queen of Scots

his mark, and his next great work, "Marmion," was also a long and stirring poem. Many stories are told of his wonderful power to work in later years, but there surely never was a busier author than he even in those earlier years of which we are speaking, when he was not only writing the poems we have named, and, above all, "The Lady of the Lake," which appeared in 1810, but was editing the works of many earlier authors, writing their biographies, discharging an important legal office, starting the famous "Quarterly Review," engaging in farming, and beginning the construction of the fine mansion house of Abbotsford. The lame boy, you see, had proved a very giant of a man, and yet he had not set his hand to the greatest work. He had already tried his hand at a long story of Scottish life and character dealing with the generation before his own—that is to say, the lifetime of his father—but the manuscript of this story he had mislaid. But, rummaging one day in the drawer of an old writing-table, Scott came upon the missing manuscript, and, sitting down to read it over again, decided to give it some finishing touches and send it to his publisher. The story which had thus been nearly lost was none other than the famous "Waverley."

"Waverley" was published without the name of the author, and, as it immediately became a popular book, Scott next addressed himself to the writing of the celebrated series known as the Waverley Novels. These wonderful stories, so fresh and vigorous in style and so thrilling in the splendid union of adventure and romance, fascinated the public of his time, and perhaps made his name the more famous because it was at first withheld.

HOW SIR WALTER SCOTT HAD TO FACE DEBTS AMOUNTING TO $700,000

From the sales of his books he earned very large sums of money, far more, and deservedly so, than any author of our time has ever earned, but he unfortunately became a partner in the firm that published his books, and that firm, being stupidly conducted, failed, involving Scott in the general ruin. This happened in the year 1826, only a few months before the death of his wife, who was the daughter of a French aristocrat driven from France to this country during the Revolution.

Sir Walter—for he had been created a baronet in the year 1820—now set himself to the hardest task a great author has ever had to face: no less than to earn by his pen so vast a sum as $700,000, in order to pay the creditors of the publishing firm the money due to them, though he had been in no way responsible for the waste of their money.

Every moment of his time that could be given to his desk he spent there, writing—writing night and day, often with a sad heart and in ill-health, spinning his stories of olden times, perhaps not so brilliantly as he had done before, but writing also many essays, and a " Life of Napoleon."

THE HAND AT THE WINDOW, AND HOW IT SWEPT THE DEBT AWAY

There is a famous story told of Scott in his Edinburgh days. A gentleman who lived opposite his house could see at the novelist's study window a hand regularly placing a newly-finished sheet of writing on the growing heap at the side of a desk. Day after day the unwearied hand was seen; it was Sir Walter's at work on his novels. Long afterwards, at Abbotsford, the same tireless hand was at work, and every time it put down another sheet a little bit of that great pile of debt had been swept away, and so, with the heart of a hero, Scott continued his work for six more years before death overtook him, on September 21, 1832. If he had not succeeded in paying all the money he had undertaken to pay, the work he had done in those six years yielded sufficient after his death to clear off every penny of his debts.

The next great story-teller does not resemble Sir Walter Scott in personal character, although his name is no unworthy one to place alongside of Sir Walter's as a novelist. Lord Lytton, while falling short of Sir Walter Scott in some respects, was a more varied genius, and, indeed, no other literary man of the nineteenth century achieved anything like his success in so many different ways. He could write fine historical novels, such as " The Last Days of Pompeii," and many other kinds of novels as well; he wrote fine plays, such as " The Lady of Lyons," and others which are still performed; while he was also a poet, though not a great one, a brilliant essayist, and a fine orator, gaining some eminence as a statesman and receiving a peerage as a reward for his political services.

LITTLE STORY-LIVES OF LORD LYTTON AND WILLIAM MAKEPEACE THACKERAY

All this will tell you at a glance what a remarkable man he must have been, matching even Sir Walter in his wonderful capacity for work. Before he was made a peer his name was Edward Bulwer-Lytton, and he was born in London, on May 25, 1803. His parents were people of wealth and distinction, so that in early life he had every advantage, but did not greatly distinguish himself at Cambridge, except in winning a gold medal for poetry.

As a little child he had loved to read all sorts of tales of romance, and began writing verse at a tender age, although in after life he won greater distinction in prose than in poetry. It is doubtful whether he was altogether a likeable boy. We know he was no favourite of his father's, but that may have been because he was his mother's darling; and at least one of his schoolmasters, Dr. Hooker, of Rottendean, seems to have been glad to get rid of him, while recognising that he was no ordinary boy. Dr. Hooker wrote to Bulwer's mother: " Your son has exhausted all I can profess to teach him. His energy is extraordinary. He has a vital power which demands a large field. He has it in him to become a very remarkable man."

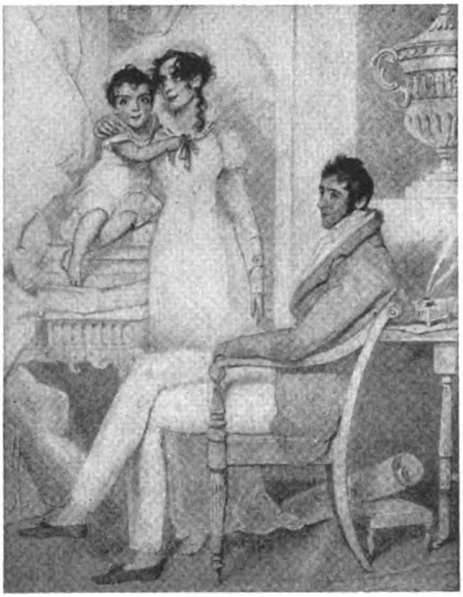
These were very true words, and were justified in every particular. When Bulwer, against the advice of all his friends, and in opposition to his mother's wish, married a beautiful but unsettled Irish girl, he took a step which was most disastrous, and few marriages of literary men have been less happy than his.

THACKERAY AS A BOY

This bust shows very plainly his broken nose, the result of a blow from a school bully.

But his unfortunate marriage had at least one good result, as his mother cut down his allowance to a mere $1,000 a year, while he preferred to live at the rate of $150,000. Thus, in order to secure the necessary money, he took to writing books, and speedily became the most notable literary man of his time, never sparing himself in the work that he had taken up as much out of love for the art as need for the money which it earned him, for in later years, when he did not require to make money by his pen, he remained as thorough and excessively painstaking in everything he did. This great author died at Torquay, on January 18, 1873, and was buried in Westminster Abbey.

THACKERAY WITH HIS MOTHER AND FATHER



We give this interesting old picture of Thackeray as a child with his parents by permission of Messrs. Smith, Elder & Co., who were his publishers. His daughter, Lady Ritchie, possesses the painting it is taken from.

The next two famous story-tellers whose names attract our attention were born within a few months of each other, and we seldom think of the time in which they lived without having both their names in our mind, although there was no great likeness either between the men or their works. Thackeray and Dickens are to-day the best-remembered novelists of what we call the Victorian period, their work having been done chiefly under the reign of Queen Victoria, although both of them had begun to write before the death of William IV. William Makepeace Thackeray was born on July 18, 1811, at Calcutta, where his parents and his grandparents before them had lived as officials of the old East India Company, which conducted the affairs of India before it was taken over by the Imperial Government. Then, as now, the children of English people in India were sent home to England, when they became of school age, to be educated in the Old Country. Thackeray's father died when the boy was only five years old, and his mother, who was noted for her beauty, afterwards married again. He was eleven when he was sent to England, and became a scholar at the famous Charterhouse School, in London.

Many great men had been scholars there before him, and as Thackeray was an easy-going, good-natured, and rather dreamy boy, he was probably given to fancying himself as treading in their footsteps instead of applying himself diligently to his studies. Certainly he did not prove a brilliant scholar during the six years he spent there, but he had a great natural gift for writing comic verses and drawing comic sketches, so that he would doubtless prove an entertaining companion to many of the boys by making fun of the teachers — a habit schoolboys have had since schools began. Being inclined to indolence rather than to exertion, he made no figure in the sports of the school, but the broken nose, which is seen in all his portraits, proves that he had at least the pluck to face an opponent, for this was the result of an encounter he had with a fighting scholar when he was only a little boy.

Thackeray did not shine at the University, and he spent only two years at Cambridge, not staying to take his degree; but it was during this time that he made his first appearance in print by writing a very amusing burlesque of the poem with which Alfred Tennyson had just won the prize at the same university. Thackeray had begun to study for the law; but, after leaving the University and spending some time abroad, he decided to become an author, as money could be earned that way more readily than in law, and he had great need of money, which he spent quickly.

Perhaps he would rather have been an artist, and he did study art for a time in Paris; but, although he used his pencil a great deal in after life, and many of his sketches are very amusing, he was never more than an amateur draughtsman. He even applied for the work of illustrating "Pickwick," the famous novel of Charles Dickens, but he could not have done the work so well as the artist to whom it was given.

What fortune Thackeray inherited he managed to lose by taking part in starting newspapers which were failures, and so he was in a manner forced to write for a living. Nor had he any difficulty in getting work to do, as everything he wrote was delightfully humorous and full of character. He was twenty-six years of age when he married, and settled in London, but some three years after his marriage the mind of his wife gave way, and all the rest of his life was clouded with this unhappiness, so that when we read his amusing stories we may sometimes think that, though he makes us laugh, his own heart was sad at the time he wrote them. The most famous of the many stories written by Thackeray is "Vanity Fair," which is certainly one of the greatest English novels; but perhaps there is no finer historical story than "Esmond," which he wrote when he was forty years of age. Many of his lighter sketches, in which he pokes fun at all sorts of people of his time, appeared in the great comic paper, "Punch," to which he contributed for many years, and perhaps he wrote so many short pieces because to the end of his days he was rather inclined to procrastinate, putting off his work to the last moment, so that the writing of a long story was a very real task to him; yet none could excel him in the art when he gave his mind to it.

THACKERAY IN LATER LIFE

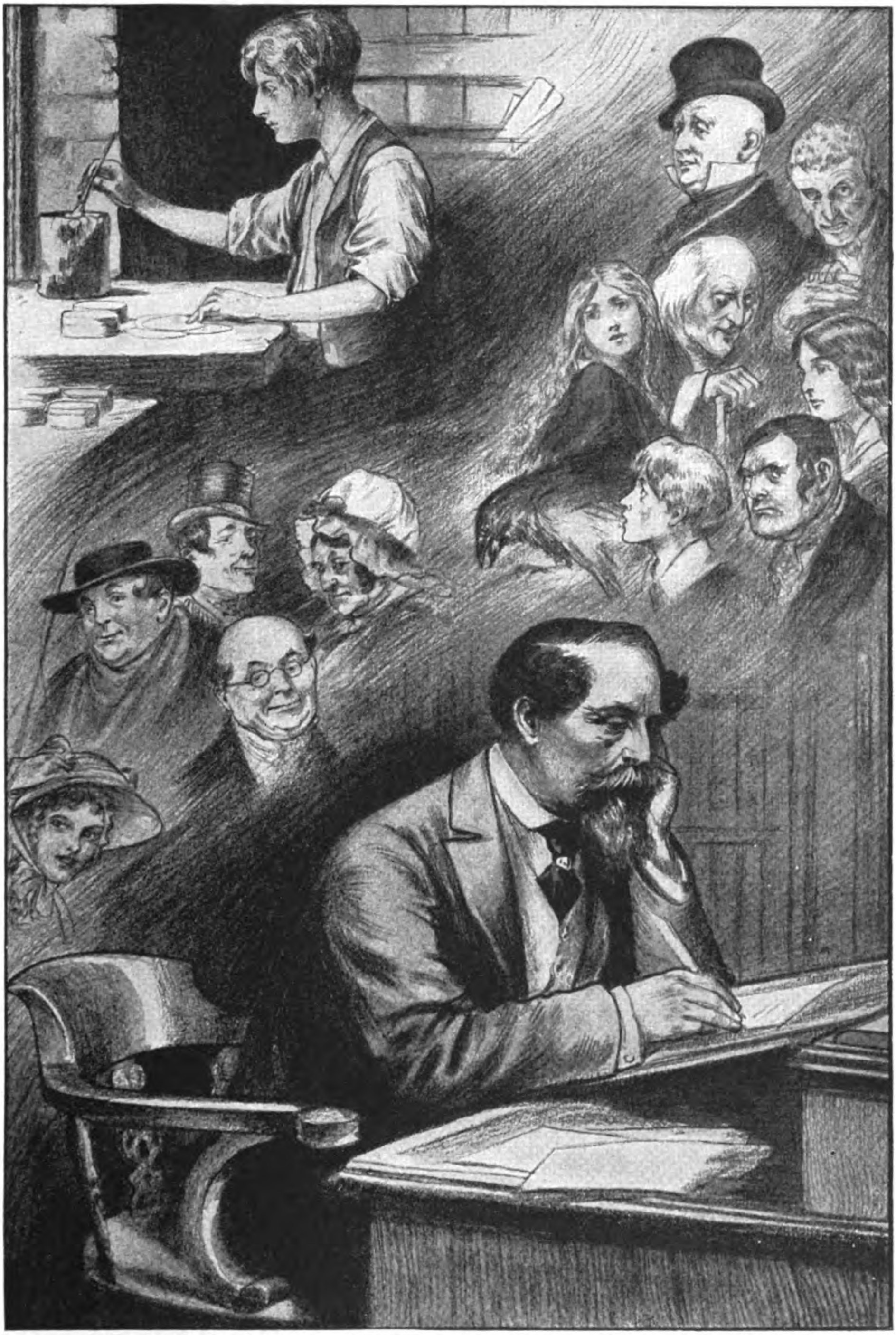
From a sketch by Sir John E. Millais

This great writer and very lovable man died suddenly on the morning of Christmas Eve, 1863, and was buried at Kensal Green, a memorial bust being soon afterwards erected to him in Westminster Abbey.

The early days of Charles Dickens were far from being happy, although both his parents were alive to look after him. That is exactly what neither of them did, and although Thackeray had lost his father, and left his mother in India, his boyhood was no doubt happier than that of young Dickens.

Charles Dickens was born at Portsea, on February 7, 1812, his father being a good-natured, lazy man, and his mother a well-educated but not a very warm-hearted woman. Little Charles was taught to read by his mother, but he attended a school at Chatham, where they lived for a time; and the great delight of his early boyhood was the reading of a little library of stories which he discovered in an upstairs room of his father's house. It is said that he would go about for a whole week together imagining himself to be the hero of some of these romances.

DICKENS AND SOME PEOPLE FROM HIS BOOKS



We here see Charles Dickens as a boy, pasting labels on blacking-bottles, and later as the world-famous novelist he became. In the shadowy background we have a glimpse of some of the characters he described in his stories. Just above his chair peeps Dolly Varden, and Pickwick, with his spectacles, old Mr. Weller and Sam, his son, and Mrs. Gamp are all near by. Then there is Grip, the raven, with Oliver Twist and Bill Sikes, Florence Dombey, and Little Nell and her grandfather. The man in the hat is Mr. Micawber, and at his side is Uriah Heep.

His father got into debt; the family moved to a miserable house in Camden Town, London. Charles, who longed to go to school, was turned into a little household drudge, and his parents seemed to forget about his education entirely.

Later on his father was imprisoned for debt, the bailiffs took away all their furniture, leaving only the beds and some pots and pans, and, worst of all, they took away the story-books which had given so much delight to Charles.

In those days a man who was imprisoned for debt could have his family to live with him in the prison, where a fair amount of liberty was allowed. And so Dickens's mother, with her other children, went to stay at the prison with his father, while he was sent out to work at the distasteful task of sticking labels on blacking-bottles, whereby he could earn a dollar or so a week. At length his father got a legacy of a few hundred dollars, and was able to leave his prison, the family taking up house again in Camden Town.

AFTER MUCH MISERY CHARLES DICKENS ENJOYS HAPPY SCHOOLDAYS IN LONDON

When Charles was twelve years of age he was taken away from his dirty work of label-pasting, and sent to a school in Hampstead Road, where the teachers seem to have been the queerest sort of people imaginable. But Dickens was happier now than he had ever been; he could indulge in his taste for reading.

For the first time in his life he had chums at school, and as he also loved to imagine himself an actor, he invented what he called a "lingo," which merely consisted in adding a few letters of the same sound to the end of every word, and, talking this aloud, he and his playmates delighted to walk about the streets pretending to be "foreigners."

Charles Dickens was fourteen when he left school and entered a solicitor's office; but on his father becoming a reporter on one of the London papers, the young Charles determined also to be a reporter. So he taught himself shorthand, and by spending much of his time at the British Museum managed to make up for the shortcomings in his education. He was twenty-two years old when he became a reporter. While he was working for his newspaper he began writing sketches of the characters he had observed; and in the year 1836 these were collected into a book under the title of "Sketches by Boz," as "Boz" was the name with which he had signed them on their first appearance. He received $750 for this book from the publisher, and when he became famous afterwards he had to pay $8,250 to buy the copyright back from the publishers of the book.

HOW CHARLES DICKENS CAME TO BE LOVED BY HOSTS OF READERS

"The Pickwick Papers" were written a year after "Sketches by Boz," and became so popular that the author was presently the happiest and most successful story-teller in England. To the end of his days he kept the love of the multitude of readers which his stories won to him. He was a true child of genius, and all the hardships of his early life, which brought him into contact with all sorts of people of the lower class, who are always far more interesting than the well-to-do people, he turned into use by weaving them into his stories. His great novel, "David Copperfield," contains much that is true of his own life; and even to-day Charles Dickens remains one of our best-loved story-tellers, though he died suddenly in the full tide of his splendid literary power on June 9, 1870, at Gads Hill, a fine house near Rochester, which, as a poor boy, he had longed to possess, and had been able to purchase when he became a successful and world-famous author.

CHARLES READE, WHO WROTE THE STORY OF "THE CLOISTER AND THE HEARTH"

A story-writer who was extremely popular in his own day, but cannot be said to have been quite so great as any of those we have mentioned, was Charles Reade. He wrote at least one historical story, which is only second-rate because it has to be compared with the wonderful stories of Sir Walter Scott and Thackeray's splendid "Esmond." This is "The Cloister and the Hearth." Its author was in many ways a very remarkable man. He was born on June 8, 1814, of well-to-do parents.

His early schooldays are said to have been chiefly noted for the amount of flogging he had to suffer, as those were the days when teachers believed more in thrashing their pupils than in making knowledge attractive to them. But he had also private tutors, and later gained some distinction at Oxford University, becoming a barrister in his twenty-eighth year. A curious fact about Charles Reade is that he is one of the few famous authors who did not begin to write early in life, as he was thirty-six before he seriously attempted the art of authorship, and he was forty-seven when his best story was written.

People who knew him seem to have liked Charles Reade because he was really a very warm-hearted friend of the poor and oppressed, and some of his stories, which were most popular in his own day, were written for the purpose of drawing attention to public evils which he wished to see abolished. He died on April 11, 1884, and was buried in Willesden churchyard.

Anthony Trollope, who was born less than a year after Reade, on April 24, 1815, was the most distinguished member of a literary family, his mother and his elder brother being also well-known authors of their day, though their works are now all forgotten.

ANTHONY TROLLOPE, THE MAN WHO COULD WRITE STORIES IN THE TRAIN

Anthony Trollope's own stories are not so often read as they deserve to be. His life is not a very interesting one to write about, as it lacks the ups and downs of fortune which make the lives of many literary men so full of interest.

Trollope was educated at Winchester and Harrow, and became an official of the Post Office, in which service he continued for more than a quarter of a century. His duties took him into many different parts of the country, and sometimes abroad; but he was so methodical a man that he allowed nothing to interfere with the writing of his stories, and resolutely set himself to produce so many pages every day, even if he had to write them in a train. Great literature cannot be created in this fashion, and though method is a good thing in a book-keeper or a carpenter, it is not so in an author who wishes to give to the world the best thoughts he can think and the finest story he can tell, as these come to him only at irregular times.

It is surprising indeed that Trollope wrote so well as he did under the circumstances, for in such novels as "Barchester Towers," "The Three Clerks," "Framley Parsonage," and others that might be mentioned, he gives us really spirited descriptions of the life of his time, which will always be interesting on account of their truth and their correct observation of manners and customs that are now passing away. He died in London, on December 6, 1882.

CHARLES KINGSLEY, A REAL HERO WHO WROTE OF HEROES

A very different type of man, and one whose name must always be remembered with admiration, was Charles Kingsley, the writer of that stirring tale of romance and adventure, "Westward Ho!" He was a very gifted man in many different ways, a true Christian gentleman, a valiant fighter for truth, a distinguished scholar, and the writer of fine, vigorous stories which, in their manly tone and simple, direct manner of telling, resemble the author himself.

The son of a Devonshire clergyman, Kingsley was born on June 12, 1819; and after distinguishing himself at Cambridge University he became rector of Eversley, in Hampshire, in 1844, where the remaining thirty-one years of his busy and useful life were spent. It would be difficult here to explain the great part played by Kingsley in awakening and directing the public mind of his time in all that concerned the religious and social well-being of his beloved England—for in Kingsley we see a fine example of the true-hearted Englishman, and it was in two of his novels, the first that he wrote, "Alton Locke" and "Yeast," that he did immense good in this direction. Such stories as these prove that the art of fiction can do far more in touching the thoughts of the general public than even serious lectures or sermons can do.

KINGSLEY AS A GREAT STORY-TELLER AND SOMETHING BETTER

"Westward Ho," of course, has no such purpose, and perhaps simply because it is a fascinating tale of adventure on the Spanish main in the great days of Queen Elizabeth it is likely to live the longest of all the books he wrote. Kingsley was also a fine poet, but, above all, he was a noble, pure-hearted, and Christ-like man, which, after all, is something better than being even a great story-teller.

He died on January 23, 1875, two years after he had been appointed Canon of Westminster and Chaplain to Queen

Victoria. His brother, Henry Kingsley, who was eleven years younger, and died in 1876, was also a brilliant novelist, and his story of "Ravenshoe" is as good as anything of Charles Kingsley's.

Of course, there are other well-known story-tellers of the nineteenth century whose lives would be interesting to know, and of the two most famous—George Meredith and Thomas Hardy, the latter is still alive; but it is impossible here to tell of every one, and we can only mention another, whose life was in many ways the most interesting of them all.

ANOTHER EDINBURGH BOY WHO BECAME A GREAT STORY-TELLER

Robert Louis Stevenson was born in Edinburgh, on November 13, 1850, and his father, his grandfather, and his uncle were all celebrated builders of lighthouses. Stevenson was very proud of his ancestors, as he might well be, for it is surely a fine work to set up these wonderful towers along the coasts to light the sailors safely home to port through the dark night. It is very likely that the romance connected with the building of these mighty beacons of the sea had much to do in kindling the love of romance in Stevenson himself, which was to result in his writing some of the finest romantic stories published in the latter half of the last century.

Stevenson was a weak and ailing child, and had his parents not been well supplied with money so that they were able to give him the greatest care, taking him to healthy places and constantly watching over him, he might never have grown into manhood. Though feeble in body, however, he was always strong in mind and brave of heart, and he could show when the time came that he could not only write of brave deeds, but that he could do them also.

ROBERT LOUIS STEVENSON AS AN AUTHOR AT SIXTEEN

He resembles Sir Walter Scott in doing nothing of note either at school or university; but while he seemed to be wasting his time he was in reality preparing himself for the work of his life by reading widely all the books we do not get at school and imitating the styles of different authors, until he had formed for himself a manner of expressing his thoughts or telling his tale which is far more charming than that of any other author of his time. He was only sixteen years of age when he wrote a description of a historical event in Scotland, "The Pentland Rising," and this was published as a little booklet.

His first real books were little stories of travel on the Continent, but it was with that most delightful tale of adventure, "Treasure Island," that his name first became popular. He next wrote "Kidnapped," a story that will long be the delight of old and young alike; and he was a charming poet, too, for no one has excelled him in expressing in verse the delights of childhood, as he has done in his famous book, "A Child's Garden of Verses."

Ill-health pursued Stevenson all his days, and it is wonderful to think that he was able during his short life, and racked by illness so often, to write so many fine stories, essays, and poems that a complete edition of his works requires no less than twenty-eight volumes, and every page he wrote has a charm all his own, for he never shirked a single sentence.

HOW THE WRITER OF "KIDNAPPED" WAS BURIED ON A SOUTH SEA ISLAND

When he was thirty-nine years of age, he could no longer fight against the severe winters of his native land, and, with his wife and two stepchildren, he built himself a strange house far away in the Pacific Ocean, on the lovely island of Samoa. There for five years he lived and worked surrounded by native servants, the friend of Samoan chiefs, who loved him as a brother and who, when he died suddenly, on December 3, 1894, cut a way through the thick bush and reverently carried his coffin to the top of the beautiful mountain he had loved to look upon from his Samoan home. And there he lies under a tomb on which these verses, written by himself, are engraved:

> Under the wide and starry sky,
> Dig the grave and let me lie.
> Glad did I live and gladly die,
>   And I lay me down with a will.
>
> This be the verse you grave for me:
> "Here he lies where he longed to be;
> Home is the sailor, home from the sea,
>   And the hunter home from the hill."

After his death the chiefs forbade the use of guns near the mountain-top where his body rests, so that "the birds may live there undisturbed and raise above his grave the songs he loved so well."

The next stories of Men and Women are on page 2379.

THE GIRL WHO SAVED PARIS

CONTINUED FROM 2204

About the year 424 A.D. there was born at a little village called Nanterre, about two miles from Paris, a little girl who was destined to do great things.

Geneviève lived at a time when the Romans had civilised her people, the Gauls, and had taught them to be Christians. Even as a little child of seven she became an earnest Christian, and people loved her for her sweet disposition. While looking after her father's sheep she spun their wool in the shade of the trees. Here, like Joan of Arc, she was in close touch with the beautiful face of Nature.

After her parents' death the little girl went to live with her godmother; and as she grew big and tall and strong she became known for her piety, unselfishness, and care for those poorer than herself. Thus the little maid grew up to a beautiful womanhood.

The peaceful life of the village was disturbed by dread and horror when news came that Attila, "the scourge of God," as he named himself, had crossed the Rhine with his hordes of savage Huns, had destroyed towns on the way, and was marching to capture Paris.

The people would have fled in terror with their most treasured possessions, but Geneviève stood on the bridge over the Seine, and urged them to return to prayer, repentance, and the defence of their homes. At that moment a present arrived for Geneviève from the good Bishop Germanus, and the people, remembering in what esteem he held her, grew ashamed of their terror, and let her lead them home to pray and to arm for defence. The prayer was answered, for the danger was averted; Attila was defeated at Chalons, and then driven out of Gaul.

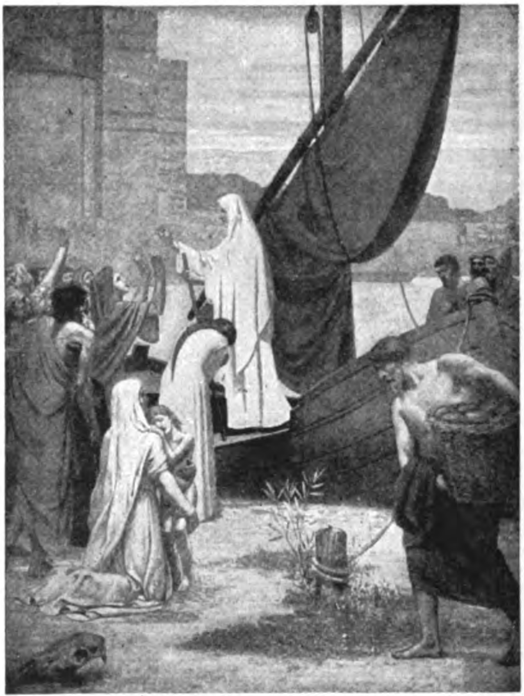
Paris was threatened, a few years later, with invasion by the Franks, who poured over from the north-east. They came along the valley of the Seine, and besieged the walls of Paris, which the Romans had built. These were strong enough for defence, but how could the citizens hold out against a more cruel foe—hunger?

It was at this crisis that Geneviève showed what fine courage she possessed. Finding no one brave enough to venture outside the walls to get food for women and children who were dying for want of it, she got into a little boat, and, steering it down stream, passed beyond the camp of the Franks till she could land at a safe spot. Then she went from town to town imploring the people to send help to Paris. This she succeeded in getting, and brought into the city a convoy of boats laden with provisions. The Franks, it is said, regarded her person as sacred, and so, not daring to interfere with her, let her pass.

It would seem from this that the defenders of Paris were not very brave men, and, indeed, at a time later on, when Geneviève was away, the Franks, under Childeric, did capture the city. The Frankish chief was afraid of Geneviève's power, and, fearful that she should come before him, gave orders that she should be shut out of the city. But, hearing that some of the citizens were to be put to death, garbed in her plain shepherdess's gown and veil, she entered, unrecognised, with some country people through the city gate, and went straight to the spot in the fortifications where Childeric and his wild Franks were holding revelry.

The scene before her was enough to make most hearts quake, and stay the courage of any but the purest, most disinterested soul; yet the brave shepherdess did not shrink from her duty, which was to rebuke and exhort Childeric, and to plead for the helpless citizens. The Frankish chief trembled before her, and granted all her request — safety for the doomed prisoners and mercy for Paris.

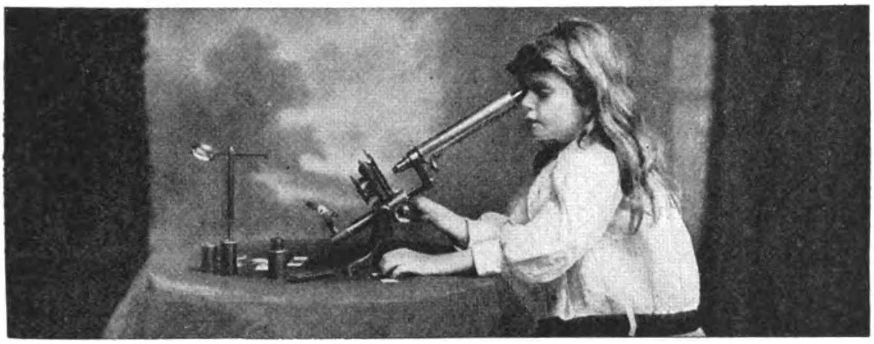
Geneviève lived to an honoured old age, spending her days in works of charity and pity, and dying in the year 512, after seeing Childeric's son, Clovis, a Christian, and the cathedral of Notre Dame founded. The Parisians look on her as their protectress, calling her Sainte Geneviève, the patron saint of their city.



GENEVIÈVE BRINGING FOOD TO PARIS

THE DEATH OF GENEVIÈVE, SURROUNDED BY THE PEOPLE SHE HAD BEFRIENDED

THE NEXT GOLDEN DEEDS BEGIN ON PAGE 2367



THE STORY OF THE MICROSCOPE

CONTINUED FROM 2244

HALF the wonders of the world are never seen by human beings. We learn very slowly. It took us millions of years to find out about steam and electricity. The use of gas for lighting was not discovered until years and years after men had seen that it would burn and light dark places. Radium, and the wonderful Röntgen rays which enable us to photograph the inside of the body, have been discovered since young readers of this story were born. Not until Galileo turned his telescope up to the stars had men really seen the heavens and their marvels.

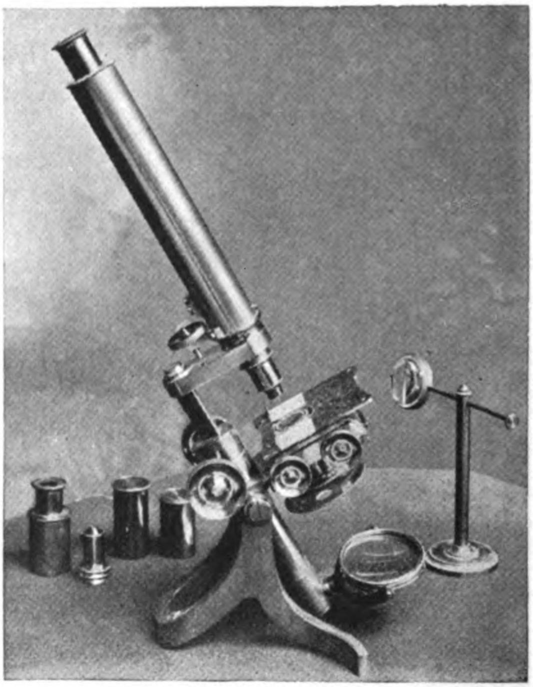
Wonderful as is the telescope, the microscope is to most of us more wonderful still. It does not make distant objects seem near. The object to be examined has to be placed quite close to the glass of the microscope, but it makes those objects seem so large that there are few secrets of Nature which we cannot examine.

For thousands of years men were on the way towards making the grand discovery of the microscope, but they stopped short of full success. When Sir Henry Layard was digging in the rubbish which covered the great palace in which Nimrod once lived, he found, in the ruins, a lens of rock crystal—that is, a lens of natural glass—which had been used as a magnifying glass when Nimrod lived, thousands of years ago.

How could they have discovered the use of the magnifying glass all those ages ago? Probably it was because they learned that if a tiny object, placed on a flat surface, were covered by a drop of clear water, the little object would be made to appear large. They would not understand that a transparent object which has its surface arched outward, like an egg, alters the direction of the rays of light travelling through it. This alteration of the direction of the rays is called refraction. The effect of this is to gather together the rays of light coming from all quarters, to focus them on the object under the lens, and to make that object appear as a very large, clear picture to the eye. The ancients would find that glass, shaped like a drop of water, would do the same thing.

At different times in history other men made just the same sort of discovery. Men made magnifying glasses by melting many threads of glass together into bubbles, and by blowing glass balls and filling them with water. Polished gems also were used for this purpose. The word *lens* tells us what men thought of the things they used. They called the glass a lens because it reminded them of the shape of a lentil seed. Spectacles are one of the forms of these glasses for making things appear larger and nearer. Those have been in use about six hundred years.

The first man to make a study of microscopes was Anton van Leeuwenhoek, a poor Dutch clerk, who was born in 1632 and lived till 1723. He ground and polished lenses which magnified things he looked at. His work was very important. In 1628 Harvey had given the world his explanation of the circulation of the blood in our bodies. That was the greatest discovery ever made by a surgeon up to that time, but scarcely anybody knew what it meant, and many people did not believe it. But Leeuwenhoek, with his microscope, was able to examine the blood in the veins and actually to see it flowing along, the first man who had ever done so. Harvey would have given all he possessed to see that sight, but he was in his grave before Leeuwenhoek made his microscope. Although Leeuwenhoek did so much wonderful work, he could not go beyond the powers of the microscope he made. It remained for other men, like Dr. Wollaston and Sir David Brewster, to make big improvements. They had great trouble with the lenses, so much so that Brewster said that we should have to use diamonds for the lenses. What was sought in the way of improvement was to increase the power of the microscope to magnify and to make the object examined clear and sharp as well as large, and with its colours preserved, not all jumbled together.



THE MICROSCOPE

Placing the object to be examined on the plate or shelf of the microscope, we look at it through the tube, which has the lens at the top, and a smaller glass, like a big diamond, at the bottom. The round glass under the plate reflects light through the plate. **The glass like a bull's eye reflects light from the gas or lamp.**

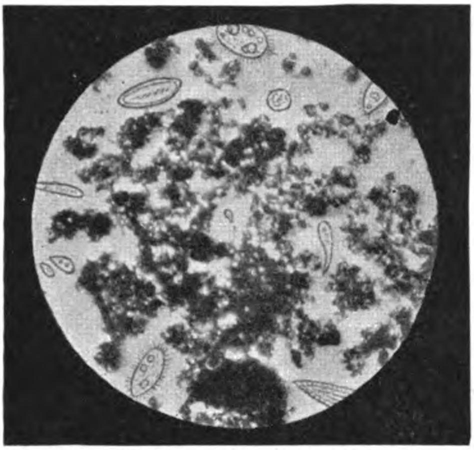
The man who finally achieved this was Joseph Jackson Lister, the father of the great Lord Lister of our own time. Lister was not poor, but he was practically a self-educated boy. He suffered from short sight in one eye. Now, when he sat at the window looking through an air-bubble formed in the glass, he saw that the bubble made the things beyond the window clear to his weak eye. This set him thinking about the use of lenses for the eyes, and when quite a little boy he managed to get a telescope. But as he had to work hard it was not till he was nearly forty years of age that he had time for bettering the microscope. That was in the year 1824, he having been born in 1786.

He employed a man to make lenses for him, but soon Lister had to take up the work himself and to make his own. He discovered that previous ways of making and arranging the lenses had been wrong. He made new lenses and arranged them in a different way. He made the microscope the thing of wonder that it is to-day.

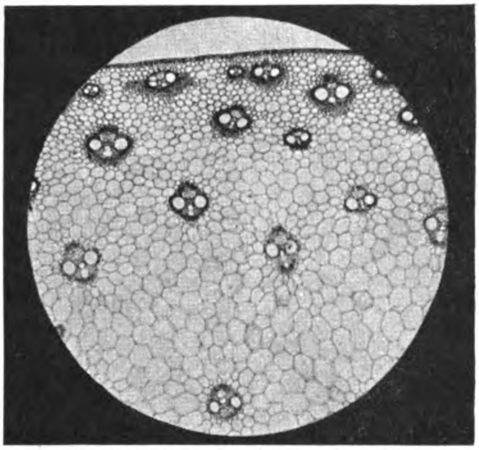
By its aid we can see a world of living things in a drop of pond water; we can make a grain of sand look like a great crystal with the light shining through it. We can see living animals in the human blood fighting out their battles before our eyes. We can see a tiny piece of rose petal becoming a marvellous web of silver cells, all filled with fluid; we can see a claw like the claw of a lion on the foot of a caterpillar.

The microscope reveals to us wonders that Shakespeare never saw; marvels that the greatest kings of the past could not have seen, had they offered their crowns to see them. The pictures in these pages show us some familiar things as seen through the microscope.

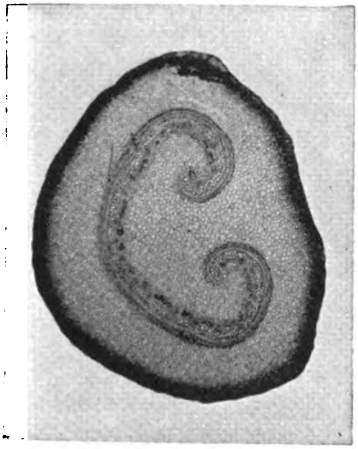
FAMILIAR THINGS UNDER THE MICROSCOPE



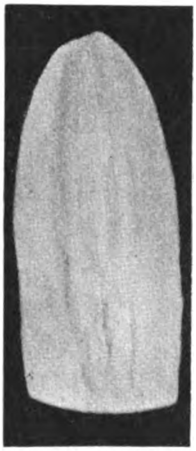
A drop of water seen through the microscope



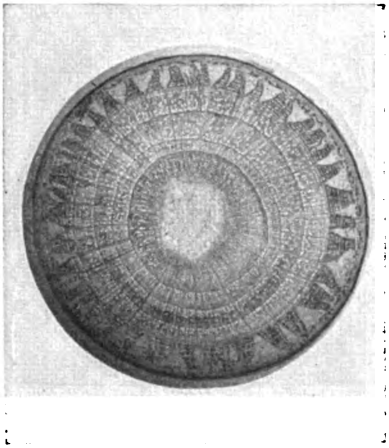
The stem of a maize plant cut through



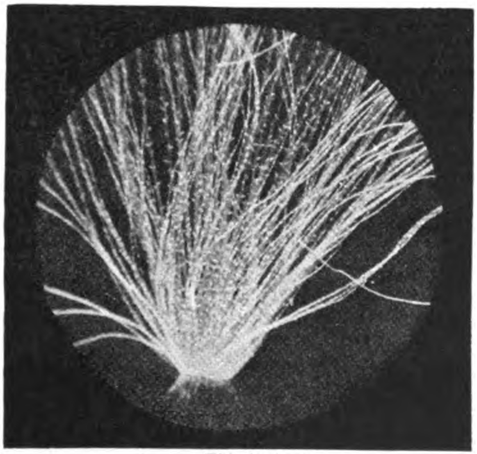
A section cut through a fern



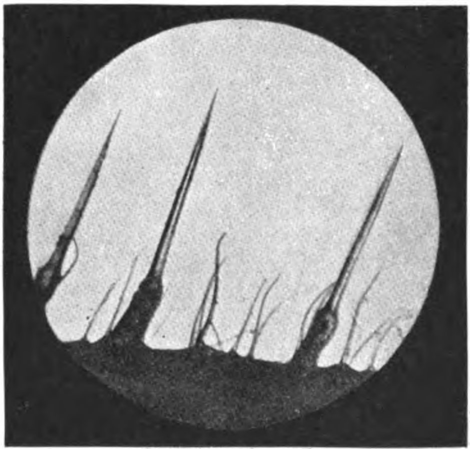
A white daisy petal



A peep inside a lime-tree twig



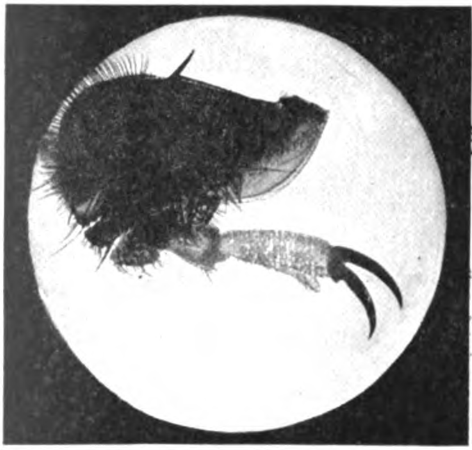
Thistle-down



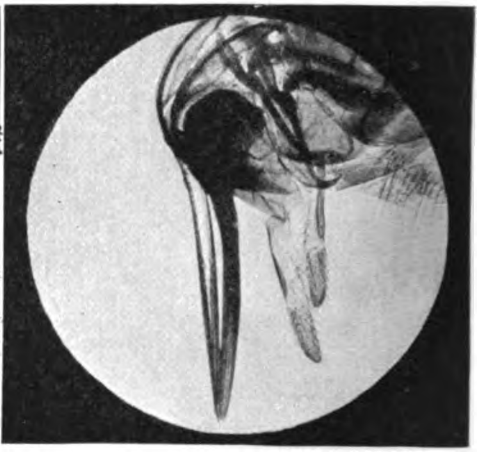
The stings of a nettle

The tiny drop of water here is magnified to 100 times the size which it seems to our eyes. It is pond water, and is full of living things, wriggling, swimming, eating, and drinking before our eyes. No wonder the nettle hurts when it has such stings! How beautiful is the interior of the lime twig when magnified, like some fine mosaic.

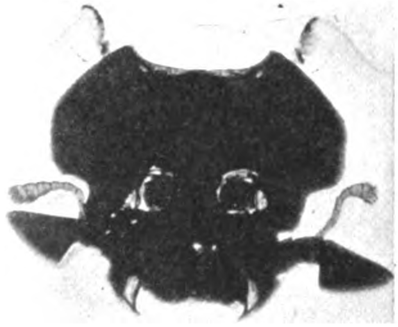
WASPS, BEETLES, SPIDERS, AND LADYBIRDS



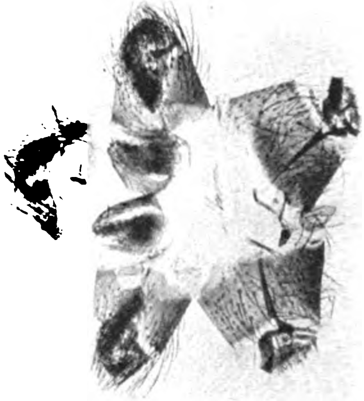
The strong leg and claw of a water-beetle



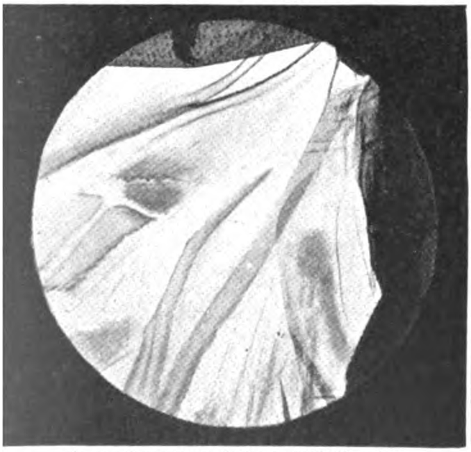
The keen spear with which a wasp stings us



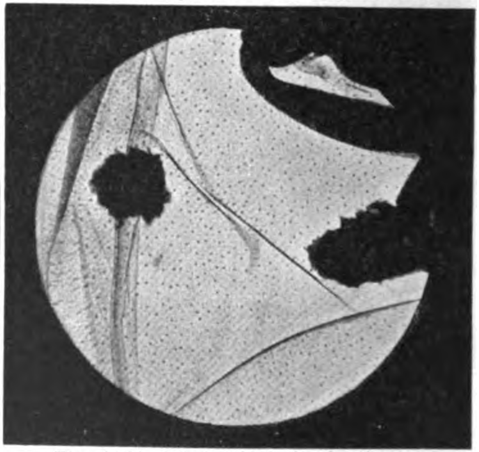
The head and jaws of a ladybird



A spider's thread, and the spinnerets from which its web comes



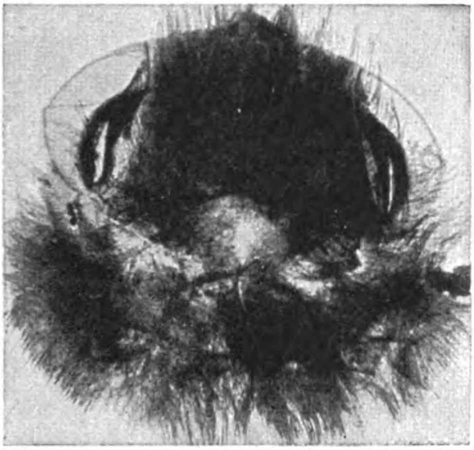
A small portion of the ladybird's wing

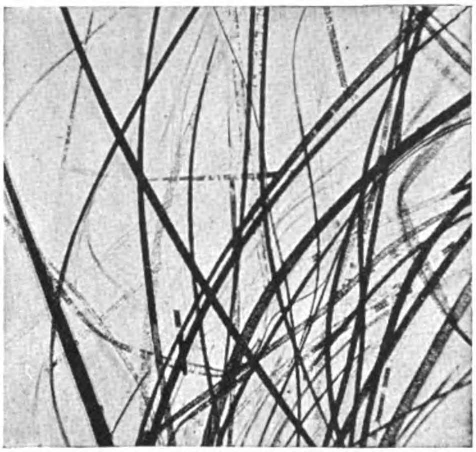


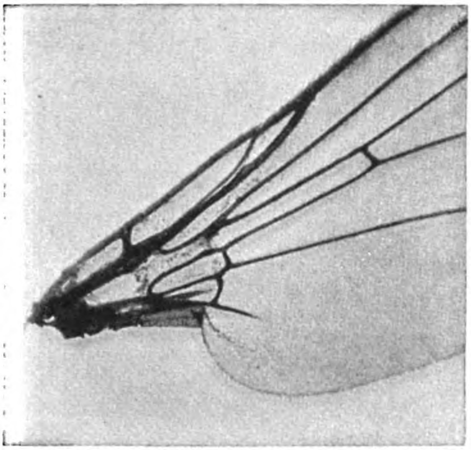
The shield of the ladybird, showing the spots

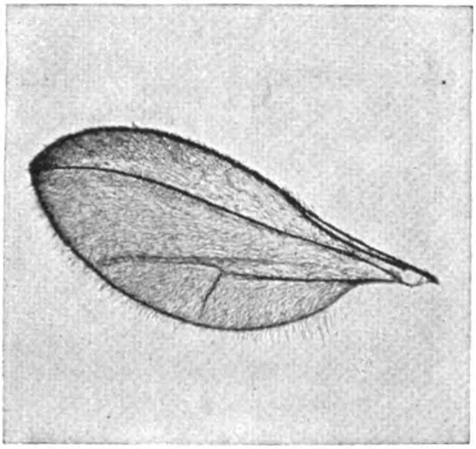
It is quite startling to look at insects through the microscope. They have weapons of which we never dreamed, and seem so big and powerful that at first the sight of them quite makes us shudder. Look at the water-beetle's claw. It looks like a crab's claw. The neat little ladybird's head looks like the picture of a demon

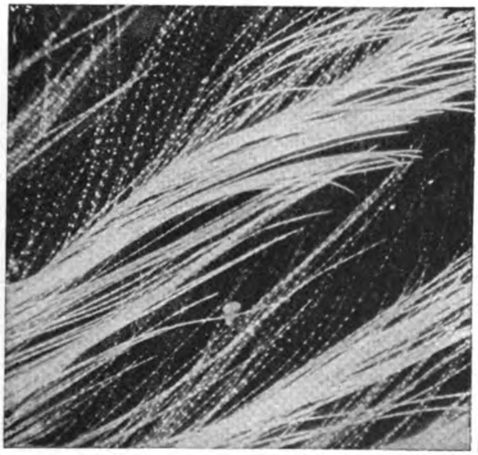
THE WONDER OF HAIR, FEATHERS, & WINGS

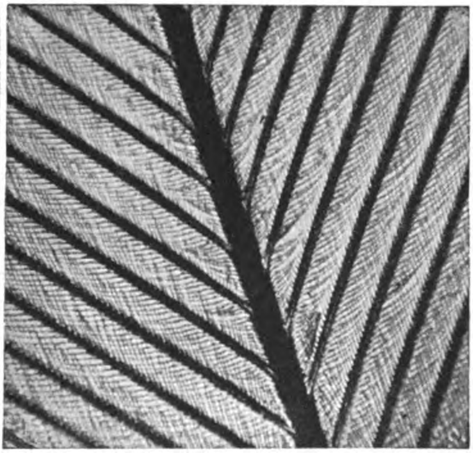

A moth's head many times magnified


The hair of a guinea-pig


Part of a fly's wonderfully-made wing

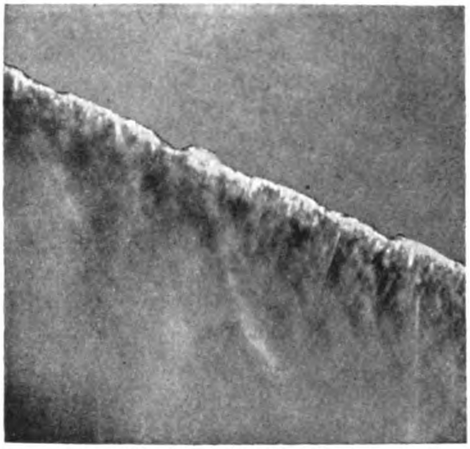

The wing of a gnat


The downy end of a small feather

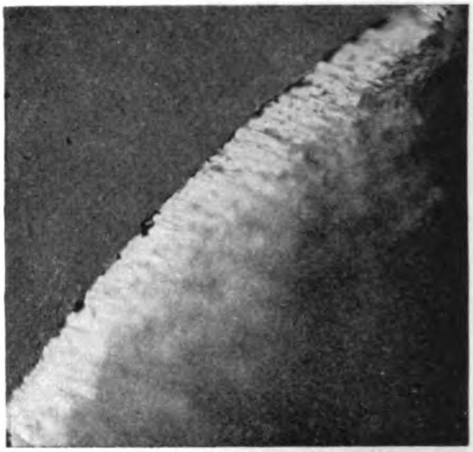

The small end of a chicken feather

The heads of moths and flies do not always come out well in photographs because it is difficult to get the right light on them. The wings of insects, however, are easy to photograph. A gnat's wing is wonderful. It looks like the transparent ear of a big stag. A fly's wing looks, under the microscope, like a wonderful raft.

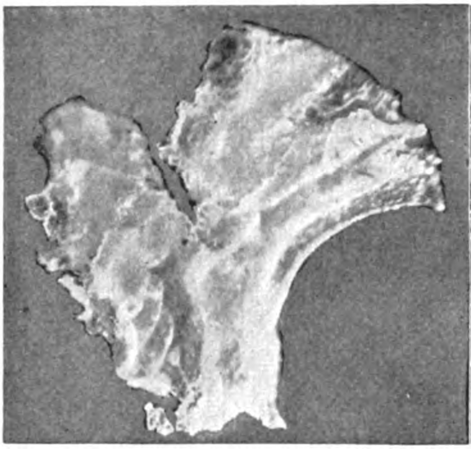
THINGS THAT ARE NOT WHAT THEY SEEM



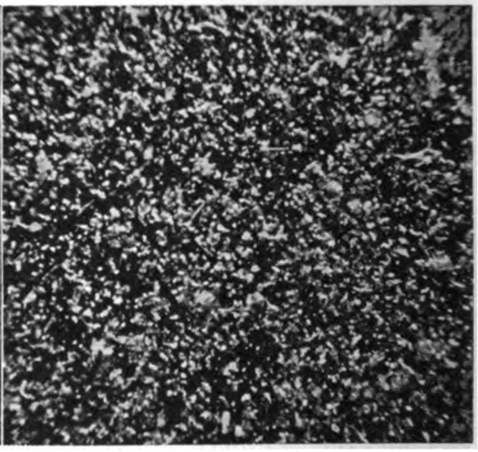
The sharp edge of a razor



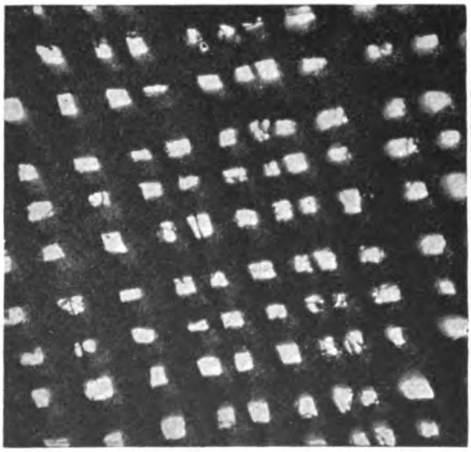
A knife-edge, looking like a mountain



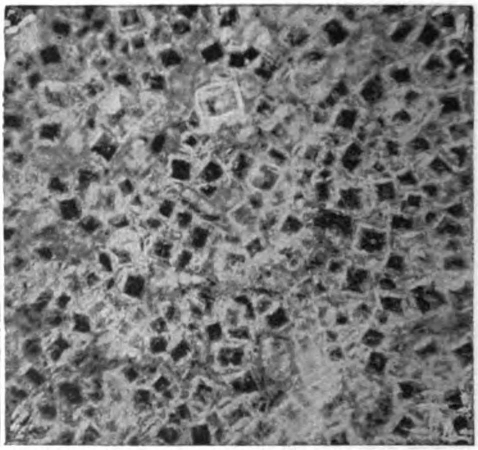
A crumb of bread



Dust on a shelf



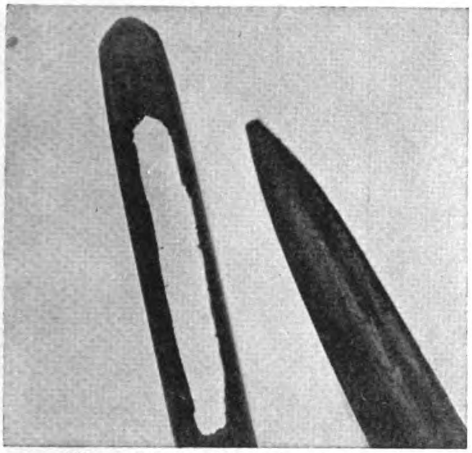
A fine linen handkerchief

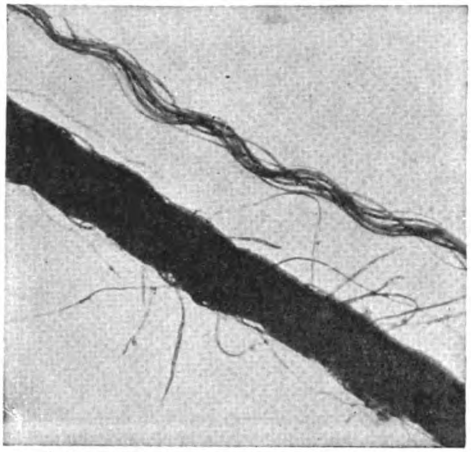


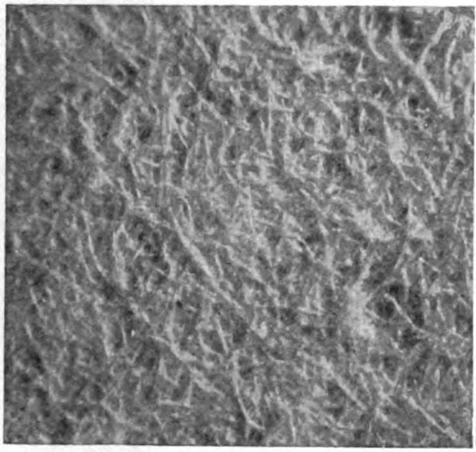
The crystals in a pinch of salt

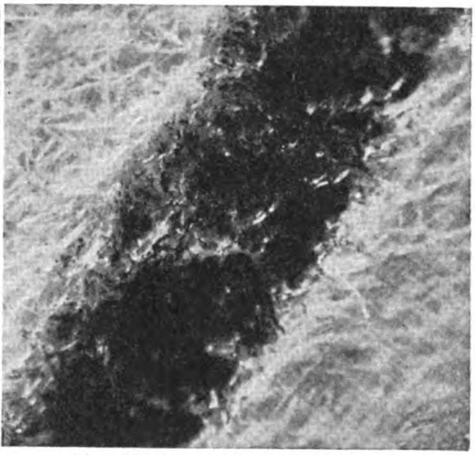
Look back at the wasp's sting and compare it with the edge of a razor. The sting looks smooth and perfect, even under the microscope, but the razor, the finest thing the cutler can make, looks jagged and blunt. How much better is Nature's work than man's! The handkerchief looks like sacking full of holes, but not really black as here.

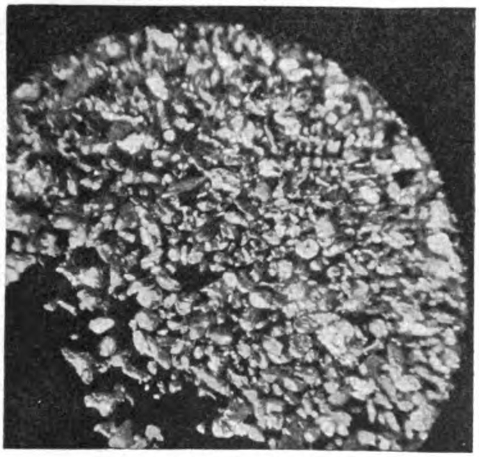
LITTLE THINGS AS THEY REALLY ARE

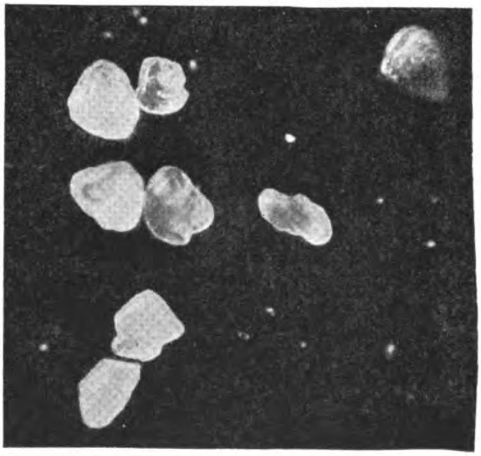

The eye of a needle and the point of a pin


A piece of cotton and some threads of fine silk


A little piece of this paper magnified

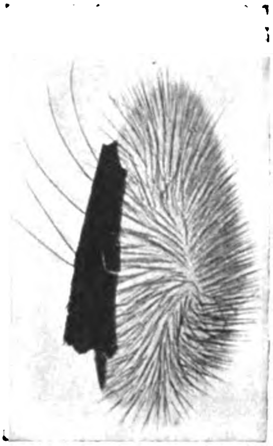

The editor's pencil-mark on this paper


Fine gold-dust from South Africa

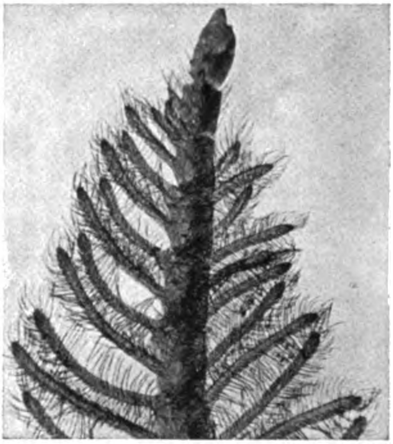

Grains of sand, looking like crystal rocks

The microscope makes the needle look like a rail with a hole through it and the pin-point like a poker. The pencil-mark on the paper was lightly drawn, but here it looks like some great volcano on the moon.

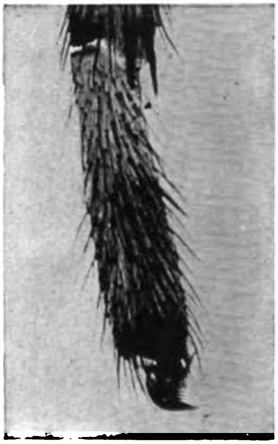
THE MARVELS OF TINY LIVING THINGS



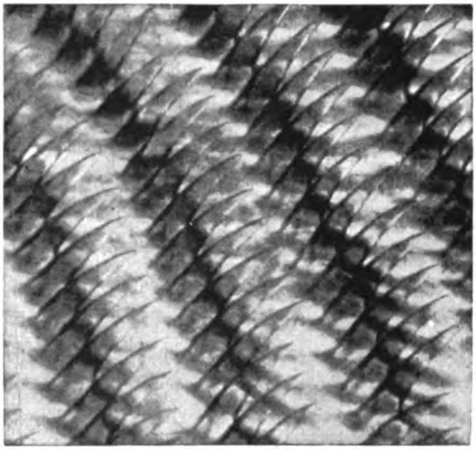
The eye of the hive-bee



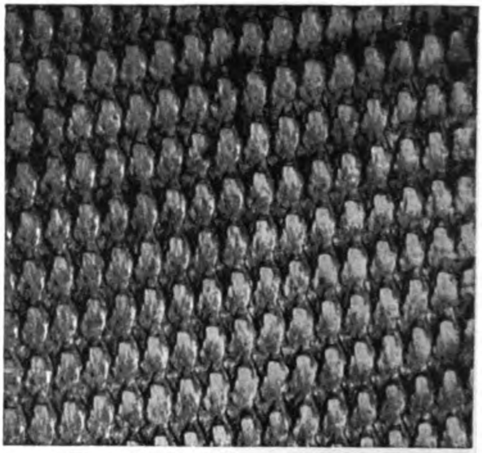
The feeler by which a moth feels and hears



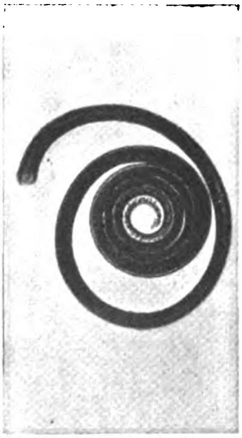
The leg of a spider



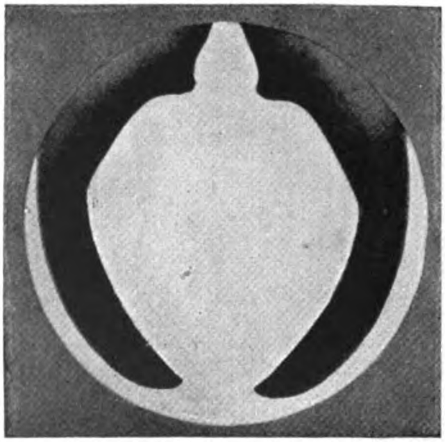
The roof of a shell-fish's mouth



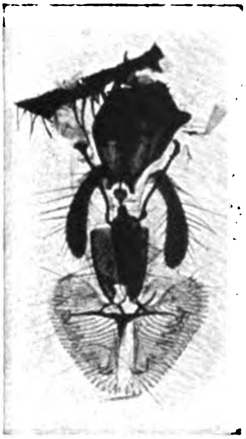
The teeth of a snail, each tooth like a file



Coiled tongue of a butterfly



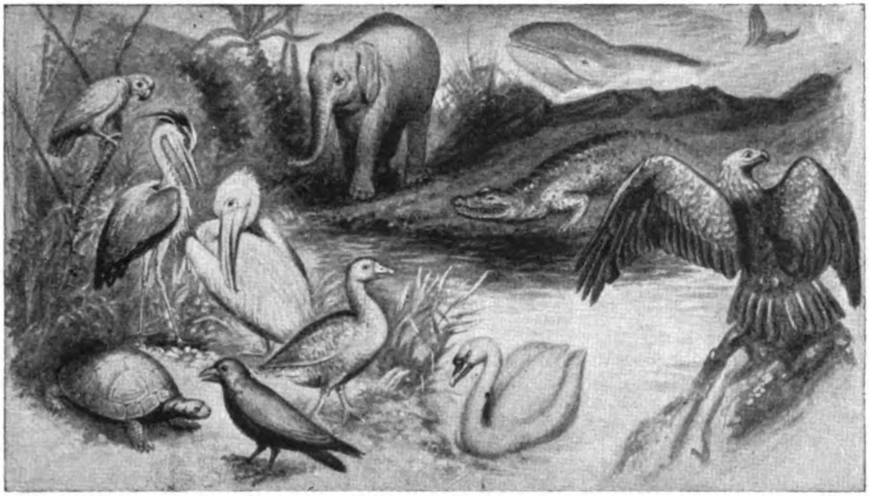
The wing-cases or "pincers" of an earwig



Tongue of the house-fly

It would be possible to make these objects larger by using a more powerful lens, but if we want to see much of the object at the same time we use a rather weak lens. We could look at a small portion of the spider's claw and make it seem like a lion's claw; and see right through the tongue of the butterfly and the pincers of the earwig.

THE NEXT FAMILIAR THINGS BEGIN ON PAGE 2357



HOW LONG DO ANIMALS LIVE?

CONTINUED FROM 2236

WE cannot give exact figures about the age of animals as we can about the age of men and women. We know the age to which men and women live, because the date of their birth is entered in an official register, and the date of their death also is recorded. Famous animals which are kept by men are registered in books kept for the purpose, so we know the age of prize horses, cattle, and other animals. But this does not help us quite as it might, for many animals, when old, are destroyed. If wild, they might live considerably longer.

The prize for the land animals has to be given to the tortoise. This animal lives, under favourable conditions, for between 300 and 400 years. One died at the London Zoo, which was stated to be at least 350 years of age. Next, we have to take another reptile—we read about reptiles on page 1217. It is the crocodile, which, given fair play in its native wilds, can live for 300 years.

If we believed all the stories we read, we should have to say that the toad, an amphibian, lives far longer than this. It is said to live shut up in a rock, or a tree, or in a piece of coal, and to grow fat on nothing, a close prisoner for thousands of years. We have read about this on page 1224, and we know that we must not believe anything of the sort until we have much better proof brought forward.

It takes an elephant a long time to grow up, and it takes him a long time to wear out. Well treated, he should live to be a hundred. That is the age to which the eagle is supposed to live, but some people put down the age he may reach as 200 years. Even that is young compared with the life of the whale. This can be shown to last for 500 years. We have not a birth certificate with the whale, and he does not invite us to his birthday parties and tell us how old he really is. Clever men, however, say that an ordinary whale lives to the age of 500 years, while some whales have been caught whose appearance has made the scientists believe them to be 1,000 years.

In the following tables the extreme ages of things like the whale and eagle and tortoise are not given. The tables merely set out the ages to which certain animals often live, not the age to which the very fortunate animals among them may possibly reach.

THE NUMBER OF YEARS THAT ANIMALS LIVE

Rabbit	5	Horse	27
Sheep	12	Camel	40
Cat	13	Lion	40
Dog	15	Elephant	100
Goat	15	Crocodile	300
Cow	25	Tortoise	350
Pig	25	Whale	500

THE NUMBER OF YEARS THAT BIRDS LIVE

Wren	3	Canary	24
Thrush	10	Crane	24
Robin	12	Peacock	24
Blackbird	12	Skylark	30
Hen	14	Sparrow	40
Goldfinch	15	Goose	50
Partridge	15	Pelican	50
Pheasant	15	Parrot	60
Lark	18	Heron	60
Nightingale	18	Crow	100
Pigeon	20	Swan	100
Linnet	23	Eagle	100

It will be noticed that many animals live longer than we do, as it is very rare for man to reach the age of 100.

WHY DOES A BRIDGE GO UP IN THE MIDDLE?

Many bridges are higher in the middle, that is, between the ends, but not all. If you look at a plain girder bridge by which the railways cross many roadways, you will find that the bridge is quite level throughout its length. But an arch bridge is usually a little higher in the middle than at the ends, and in very old bridges the difference in height is very great indeed. The reason for the higher middle portion is that an arch is the strongest form of building structure. The more pressure is applied to the top of an arch, the closer are its parts pressed together. Arch bridges could easily be made with a roadway quite flat on top, but if they were made so, the roadway at each end would need to be made higher, or the space beneath the arch would be lower. So the most convenient form of arched bridge has been proved to be one which makes necessary a roadway that is higher in the middle than at the ends.

WHY IS LANCASHIRE THE COTTON COUNTY?

Nature fashioned Lancashire to be the greatest cotton manufacturing county in the world. It is sheltered on the east by lofty hills, which, to a great extent, keep off dry land winds. From the south and west come winds which are moist and mild through passing over the Gulf Stream. The effect of this is that Lancashire has a very heavy rainfall, sometimes twice as heavy as that on the east coast. Naturally, then, the air of Lancashire is moist. This favourable air makes the cotton fibre soft and easy to handle. There is no other place in the world which can turn out the finer qualities of cotton like Lancashire.

When all is well with the climate, one hardly understands how important the weather is to Lancashire; the work goes on so smoothly as to make one think that it might be done equally well anywhere. But when there is a long spell of dry weather, and the east wind blows, then the weavers and spinners of cotton are in despair. The moisture goes out of the air, and the cotton fibre becomes like a new material. It is no longer easy to handle; it becomes dry and brittle, and cannot be made to combine.

In such weather the workpeople have a hard task to earn enough money to live upon. The quality of their work is not as good as they desire it to be, and the quantity of it is very small compared with that which they turn out when the weather is favourable. The worker in cotton in Lancashire is happiest when the rain is steadily falling as he works. It is not cheerful weather to be out in, but all is well with his cotton; he makes plenty of money easily, and the cotton that he makes is the best in the world.

IS IT TRUE THAT EARWIGS ENTER THE EAR?

This is a question which people have been asking for thousands of years in all the countries of Europe. Without any evidence they have all made up their minds that the earwig *does* enter people's ears. The Germans give it a name which means the ear-worm; the French call it the ear-piercer; the Armenians name it the ear-enterer; and among its other European names are those of ear-twister and ear-borer.

Naturally, we might say that if so many people have for so long believed it, surely it must be true that the earwig is guilty of the crime which its name suggests. But that is not the case. What, then, is the meaning of the name? Well, the earwig works and feeds at night. It creeps into our flowers and into any fruit which has been damaged. It cannot bear the light, so when day comes it buries itself in any tiny corner that it can find, where its eyes can be screened from the light which blinds it. At night it goes anywhere and everywhere, and people, seeing how it hides in strange places, and noting its long, thin body, think that it is just the sort of thing that would slip into the ear of a sleeping person. It *could* make its way into an ear, no doubt, but a million things might happen in life which do not happen, and the offence with which the earwig is charged is one of them.

WHY ARE THE WORDS "ANCIENT LIGHTS" PUT OUTSIDE WINDOWS?

When we see these words placed on the outside of a building we know that the owner of the property is warning other people not to build in such a way as to keep out the light from the windows or openings over which he puts his notice. The law is that if for twenty years we have the light admitted by a window or opening into our premises, without interference from anybody, then we have the right to continue to be supplied with light in exactly the same place. Suppose a builder buys the land in front of ours, he might build a great place which would overshadow ours and block out the light. The law says that he shall not do that. Provided that we have had the privilege of light for twenty years, no man may build us up if we object, and our notice-board warns him that we do object.

In order to guard against having to pay for such a privilege, builders will sometimes, before the twenty years have passed, deliberately darken other people's windows.

There was once a wretch who put up a huge black hoarding as high as the top of some cottages, entirely blocking up the view from the front of those houses, in order that they might not have twenty years of light, thus hoping to prevent the landlord from claiming compensation for ancient lights when the time came for new houses to be put up on land adjoining. He did not think of the misery he was causing the poor people who lived in these cottages.

WHY DO BIRDS CAST THEIR FEATHERS?

Feathers become worn and torn and broken, and must be replaced. We do not know how birds manage to moult their feathers; it is one of the wonderful provisions of Nature, whose effects we see without being able to say exactly how they are caused. But the moulting of birds is similar to what takes place in other forms of animal life. Horses grow long coats of hair in winter which they shed in summer. Dogs cast their coats. Snakes cast their skins; crabs and other shell-fish cast their shells. If a crab lived always in one shell his body could never grow any bigger. At a certain time in the year his flesh becomes very watery, so that he can draw those great claws of his through the narrow opening at the top of the shells in which they are enclosed, and he comes out of his shell almost as soft and pulpy as an egg in its skin with its shell removed. Birds are never left bare like this. They moult gradually. Some are so completely robbed of their strong feathers that they are glad to go into hiding until the new ones grow. They are then as defenceless as is the stag which has shed its mighty antlers.

WHEN WAS CHRISTIANITY INTRODUCED INTO ENGLAND?

It is often said that it was St. Augustine who first introduced Christianity into England in the year 596 A.D. But this is not exactly true. There were Christians in England long before that date. St. Augustine came on a special mission from Pope Gregory the Great, and he afterwards became the first Archbishop of Canterbury; and that is why he is so often said to have introduced Christianity to England. But, as we see if we turn back to page 352, there were British churches and British bishops long before his time. And, indeed, it would be strange if, while there were strong and flourishing Christian churches in France—then called Gaul—within 200 years of Christ's birth, the British Isles, so close to France, should have heard nothing of Christianity until 400 years later. We know for certain that many soldiers in the Roman legions were Christians, which shows that Christianity had penetrated the army, and, as many legions were in Britain for the first three or four hundred years after Christ, Christianity was probably brought into the country by them. Nor must we forget the traders and merchants who were constantly coming and going between Britain and the East; many of these would be Christians, and would spread their own religion among those with whom they traded. Gradually little churches sprang up and increased, until by the year 314 A.D. we find three British bishops attending a great council held at Arles—the Bishop of York, the Bishop of London, and the Bishop either of Lincoln or of Caerleon-on-Usk. So that in less than 300 years after Christ's death there was an organised Christian Church in Britain, and this means that Christianity must have been introduced even long before.

DID ANY OF THE APOSTLES GO TO ENGLAND?

Although many of the Apostles are said to have travelled far and wide, there is no record of any of them having gone to England. Still, this does not make it absolutely certain that none of them went. Britain was within easy reach of Rome, and we know for a fact that the Apostle Paul went to Rome, and we are almost sure that Peter also visited Rome. It is just within the bounds of possibility, though not at all likely, that Paul did visit England. He tells the Roman Christians in his letter to the Romans that he hopes to go on to Spain after he has seen them. And Clement of Rome, a great and good man, in a letter that he wrote to the Corinthians in the year 96 A.D., says that Paul went "to the extreme of the west," or "to the western limit." There is a story that Paul visited South Wales and founded a college there, and the remains of what was said to be this college were discovered and dug out a few years ago; but, of course, that is only a story.

There is no doubt, however, that the Apostles literally obeyed our Lord's command, and as far as possible preached the Gospel to every creature. John settled at Ephesus; Matthew is said to have preached in Ethiopia; Bartholomew visited Asia and Arabia. Thomas is reported to have founded the Church in Persia, and Andrew to have gone to Scythia. And there is very little doubt that at a very early date the Gospel was preached as far away as India.

HOW MANY WORDS ARE THERE IN THE ENGLISH LANGUAGE?

A dozen great scholars might give as many answers to this question. One of them, some years ago, gave the number as only 38,000. But a still greater scholar, Professor Max Müller, who was, perhaps, the greatest authority of his time on words, put the number of words in the English language at 100,000. He compared the growth and development of our language with the putting of grain in a sieve. Most of the chaff has been winnowed off, and with it have gone many good grains. Good old English words, which are now considered only dialect words, have gone out of the language. If we include all the words which have fixed places in the dialects of the country, and include also many which we know were spoken in earlier times, we shall have to put the total at 300,000 for the English language.

That number is constantly growing. Words have to be invented for new industries, and they become part of the language. When a new dictionary was made, not many years ago, it was found that the new words necessary for use in relation to electricity and electrical appliances numbered over 4,000. A similar increase had taken place with regard to other arts and sciences. Most of them are purely technical words, but, little by little, they become common words as all of us get to know more about science; and so the language grows.

HOW MANY WORDS DO MOST OF US USE?

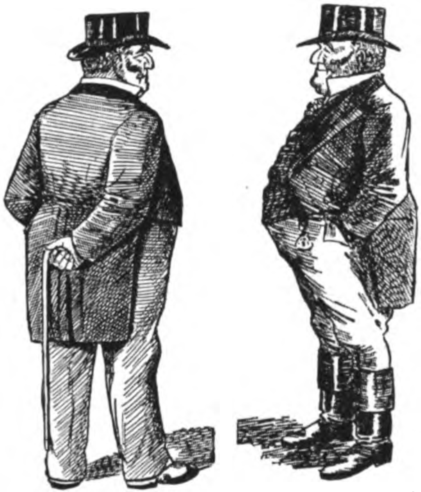
We need not tremble at the number of words it is possible to use. Our greatest writers find quite a small number sufficient for their purpose. Shakespeare, with all his varied writings, used only about 15,000 different words. Milton needed only 8,000 different words for "Paradise Lost," while the Old Testament contains fewer than 6,000 different words. Some country people use only about 800 different words, and most of us use no more than one or two thousand.

The beauty of writing and speech lies not in the number of words used, but in the choice and placing of them. Simple language is the most beautiful. The finest English writing is in the Bible, in "Robinson Crusoe," and in "The Pilgrim's Progress," and in each of these books the language is so simple that a child may understand, while great scholars find equal delight in it.

WHY IS THE ENGLISHMAN CALLED JOHN BULL?

Every country has a nickname, and is represented in pictures by an animal. The British lion is the animal which stands for England, and John Bull is its owner and master. The lion is the country; John Bull is the nation. The name of John Bull comes from a work written by John Arbuthnot, a witty doctor and writer, a great friend of Swift and Pope. He was born in 1667, in Scotland, and died in 1735. The sketch that he wrote dealt with the political affairs of Europe at the time, and the countries were made to appear as if they were men and women.

England was John Bull, and Queen Anne was Mrs. Bull. The Church was Mr. Bull's mother. Scotland was John Bull's sister, Peg. England, the nation and country, was made to appear like a man of very good nature, but not without faults. As roast beef and plum pudding are the national dishes, the name of Bull answered very well. John was shown to be an honest, plain-dealing man, courageous, and rather hot-tempered. He was supposed to be always ready to meet the French king with any sort of weapon, in earnest or in play. He was very difficult to deal with, especially if anyone tried to master him; but, treated with kindness and a little flattery, he could be led by a child.



"John Bull" as drawn by Sir Francis Gould, the famous artist of the "Westminster Gazette."

HOW DID WE GET THE PICTURE OF JOHN BULL?

It needed only an artist to draw a fancy picture of such a man, and there was a national figure ready made to represent England for all time. When we look at the famous John Bull which Sir Francis Carruthers Gould draws in the "Westminster Gazette" we see just the man whom Arbuthnot painted in words, only this artist gives John Bull more dignity, and a less uncertain temper.

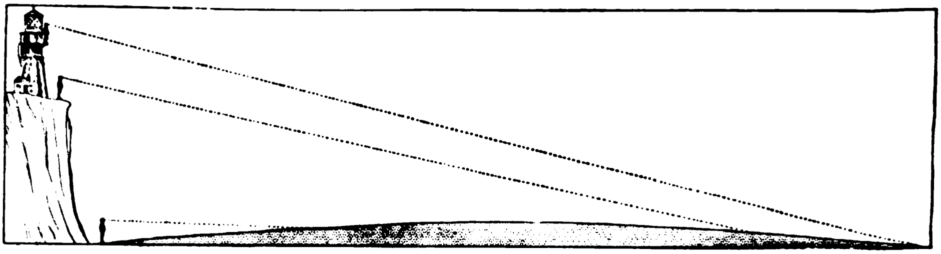
There was a John Bull in real life, a Doctor of Music, who lived between the years 1562 and 1628. He is regarded as the composer of "God save the King." Nobody can be quite sure who did write the National Anthem, but there is reason to believe that the melody was found written down among the papers which Bull left, and that it was made the tune for the National Anthem, years after his death, and without his intending it for such a purpose. If he did write it, it is really odd that the National Anthem should be written by the man with the national name.

HAVE WE YET DISCOVERED ALL THE WORLD?

No; the Antarctic regions still possess secrets which as yet no man has been able to solve. Many brave men in many fine ships have gone into the gloom and silence of the frozen regions in the hope of discovering the Poles; but a great many have perished in the attempt. Though a brave American naval officer, Commander Robert E. Peary, finally reached the North Pole in 1909, the map of the world around the South Pole is still blank. When men reach this Pole, we may say that all the lands and seas have been discovered, but that is very different from saying that they have all been explored. We may discover a picture-gallery, yet not know what it contains. There is much land still to be explored in Asia. There are parts in the far north of the American continent of which we know very little. In the great sandy, stony heart of Australia there are places of which we have only very little knowledge.

The continent of Africa has been travelled from end to end, and from side to side, but we can fix a point on the east coast of Africa and come out at a point on the west coast, and cover ground which no white man has previously crossed.

But missionaries and traders are constantly going farther into the mysterious places of the earth, and getting to know strange peoples; and the unknown land is slowly becoming known.



HOW FAR OFF IS THE HORIZON?

The word horizon is Greek, and is derived from the Greek word for a boundary, which is *horos*. Of course, we understand that the horizon is not really the boundary between earth and sky, but merely the boundary between them as they appear to our eyes.

This is a question often asked by boys and girls. As we stand by the seashore, the sky and the sea seem to meet. We can see a line which seems to be the end of the sea and the bottom of the sky. That is the horizon. Similarly, if we stand upon a plain of land we can, if there are no trees or houses in the way, see where the end of the land seems to touch the bottom rim of the dome we call the sky. That also is the horizon.

Its distance depends upon how high our eyes are from the level of the sea if we are looking across the sea, or from the level of the land across which we are looking if we are looking over a plain. The picture shows clearly how this is so. The boy standing by the seashore is looking out upon the sea from a distance about 4 feet higher than the level of the sea—the height of his eyes from sea-level. He can see just a little more than 2½ miles in front of him, and his horizon is just this distance away. The eyes of the boy on the edge of the cliff, on the other hand, are 100 feet above sea-level, and he can see about 13¼ miles off, and that is where the horizon is. Again, the top of the lighthouse is 150 feet above sea-level, and if a boy looked out on the sea from this point, he would see about 16¼ miles, and his horizon would be 16¼ miles away.

WHY DO WE SEE FARTHER IF WE ARE HIGHER UP?

The scientific explanation of this would be that "range of vision is determined by the altitude of the observer." In simple language, this means that the higher up we are, the farther we can see. That is because our world is a globe. Perhaps you can understand better how this is if you stand in front of a row of houses that form a bulging crescent. Stand close to one of the houses, and turn your head first to the right, and then to the left. You cannot see much of the row of houses—perhaps only a little bit of the house on each side of the one of which you stand in front. Step back into the middle of the road, and look again. Now you can see a good many more of the houses, but still not all if the row is long. Then go to the far side of the road, and a good many more will be found to have come within the range of your eyes.

To look for the horizon is much the same thing. The earth is round, and the farther we are above the ground along which we are looking, the farther we can see. This table shows how far

Height in feet	Distance in miles	Height in feet	Distance in miles	Height in feet	Distance in miles	Height in feet	Distance in miles	Height in feet	Distance in miles
1	1¼	14	5	60	10¼	130	15	600	32½
2	1¾	16	5¼	65	10½	140	15½	650	33¾
3	2¼	18	5½	70	11	150	16¼	700	35
4	2½	20	6	75	11½	200	18¾	800	37½
5	3	25	6½	80	12	250	21	900	40
6	3¼	30	7¼	85	12¼	300	23	1,000	42
7	3½	35	8	90	12½	350	24¾	2,000	59¼
8	3¾	40	8½	95	13	400	25½	3,000	72½
9	4	45	9	100	13¼	450	28	4,000	83¾
10	4¼	50	9¼	110	14	500	29½	5,000	93½
12	4½	55	10	120	14½	550	31	5,280 one mile	96

anyone can see at various distances from the earth's surface. At the height of 5,280 feet, which is one mile high, we can see 96 miles. The figures are generally correct, but not quite exact, because to be perfectly exact we must use fractions, which are avoided in the table that we have seen for the sake of simplicity.

WHAT HAPPENS IF AN IRRESISTIBLE CANNON-BALL HITS AN IMMOVABLE POST?

The Wise Man laughed when he heard this question, because it is a good old puzzle, which has often been asked before. But it is like a great many other questions that people puzzle themselves over, even quite grown-up people, who ought to know better ; and a great deal of the quarrelling about things that go on in the world is due to people trying to answer questions like this, about which we might quarrel to the end of time without getting any further. This is a question that cannot be answered, for the very good reason that it is a question that cannot be seriously asked by anyone who thinks.

A wise man has said that one of the great things that wisdom does for us is to teach us how to ask questions, and wisdom certainly teaches us not to ask silly questions like this one. For do you not see that the irresistible cannon-ball and the immovable post cannot exist together ? When we say *irresistible* cannon-ball, that is as good as to say that there is no post which can resist it. When we say *immovable* post, that is as good as to say that there is no cannon-ball which can knock it down. If either of these things exists, then the other cannot exist. And so, of course, there is no answer to the question what would happen if they existed together, for it is part of the very nature of each of them, as we describe it, that the other could not exist at the same time.

WHAT DOES THE UNION JACK STAND FOR?

The Union Jack stands for British power and freedom all over the world. The name of the flag, though it seems at first to be only a name and nothing more, is really a very excellent name, because the word " Jack " comes from the old " jacks " that sailors used to carry on board ship—a kind of leather coat, stamped with the red cross of St. George. The word " Union " means, of course, the union of the three countries that make up the British Isles, and so we get the idea that the Union Jack is a sort of British Jacket—a jacket of defence for the people of the British Empire.

WHAT ARE THE THREE FLAGS IN THE UNION JACK?

The Union Jack is made up of three flags—the English flag of St. George, the Scottish flag of St. Andrew, and the Irish flag of St. Patrick. St. George, who lived about 300 years after the birth of Christ, was a heroic soldier who gave up his life rather than deny his faith at the bidding of a Roman emperor. Edward III. adopted his name as a war-cry for England, and the beautiful red cross of St. George on a white ground became the English flag. St. Andrew was one of the twelve Apostles, and he was crucified on a cross shaped like the letter X. Some relics of the Apostle are supposed to have been carried to Scotland, and the white cross of St. Andrew on a blue ground long ago became the national flag of Scotland. St. Patrick was carried to Ireland as a slave at the beginning of the fifth century. He lived there for thirty years, founding many schools and monasteries, and died there a very old man. Many centuries afterwards, the cross of St. Patrick became the national flag of Ireland.

HOW DID THE THREE FLAGS BECOME ONE?

The three flags became one by the union of the three countries. At the beginning of the seventeenth century the crowns of England and Scotland were united, and so the cross of St. Andrew was added to the cross of St. George as the first Union flag of Great Britain. At the beginning of last century Ireland was united to England and Scotland, and the cross of St. Patrick was added to the Union flag. The flag is ingeniously arranged so as to give each cross equal prominence.

When one sees this flag flying on public buildings, or at sea on British ships, or at the British Embassy in Washington, or in far-off parts of the earth, let him remember what it means. It is not a flag of war, but it stands particularly for the memory of three good and brave men, and it stands generally as a sign that Great Britain loves freedom and peace.

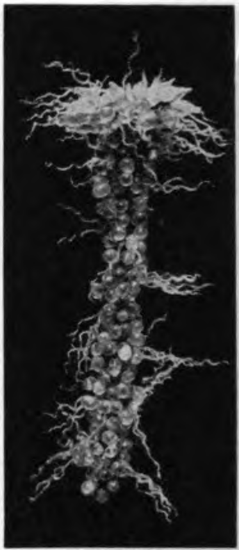
The next Questions begin on page 2453.

STRANGE FORMS OF LIFE BELOW THE SEA

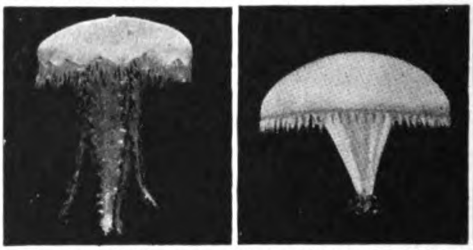
A colony of polyps

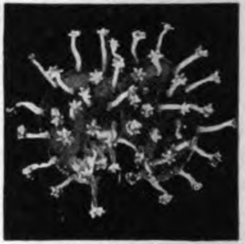
Sea-pen formed of animals

A Portuguese man-of-war


A colony of polyps

White coral


Two beautiful forms of medusa which sting terribly


White coral

A beautiful sea-nettle

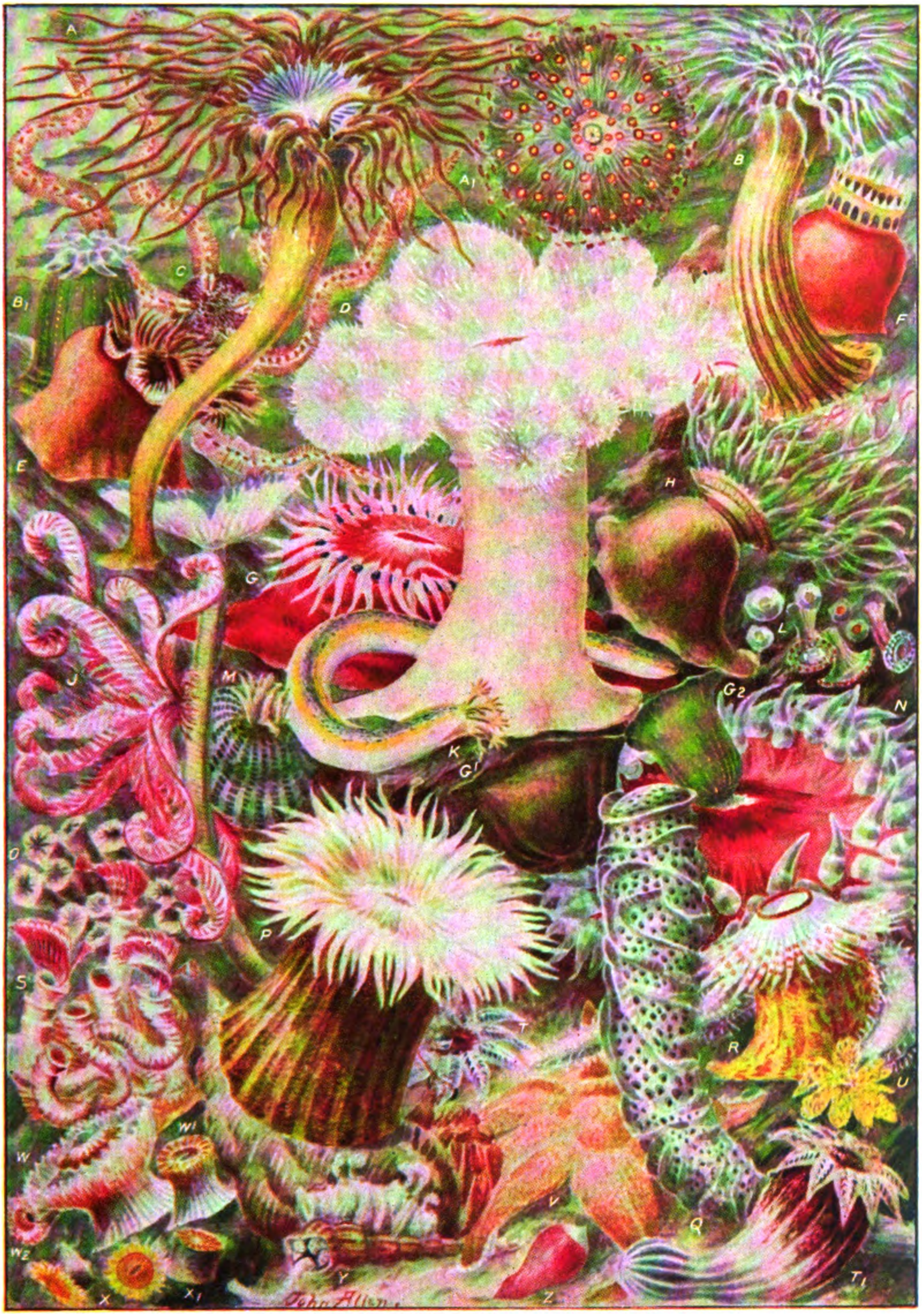
A jewelled sea-slug

A sea-pen

Colony of tiny sea animals

These are photographs of animals living in the sea. Many of them belong to the sea-nettle family, stinging far worse than the nettle. A touch from the tentacles of a medusa will make a man quite ill all day, and he will feel the effects for weeks afterwards. Strong winds sometimes drive them on to our coasts, where they annoy bathers.

THE LIVING FLOWERS OF THE SEA



These creatures are the simplest forms of animal life now existing, and in many ways resemble the lower forms of vegetable life.

A. Trumpet anemone
A_1. Purple-tipped sea-urchin
B. Snake-locked anemone
B_1. Gold-spangled anemone
C. Brittle starfish
D. Plumose anemone
E. Scarlet-fringed anemone
F. Diadem pimplet anemone
G. Beadlet anemones
H. The opelet anemone
J. Pink feather-star
K. Sea-cucumber
L. Globehorn anemone
M. Glaucous pimplet anemone
N. Dahlia wartlet anemone
O. Tuft coral
P. Anemone on whelk-shell
Q. Venus's flower-basket
R. Gapelet anemone
S. Tube-forming annelids
T. Arrow muzzlet in sand; and T_1, exposed
U. Sea-cucumber
V. Five-finger starfish
W. Devonshire cup-coral open; and W_1 & W_2, closed
X. Scarlet star-coral
Y. Siphon-worm in a shell
Z. Siphon-worm

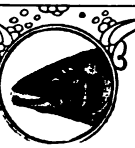
Most of these have feelers, and depend chiefly on the sense of touch for their food. The feelers seize the food and draw it into the stomach.

THE FISHES OF THE SEA

We know that all life began in the sea, and we have read on page 46 how life came out of the sea to cover the land. But life did not leave the sea for ever. There is still more life in the depths of the ocean than on the land. The sea teems with unnumbered forms of life—life as simple as that which first swam in the waters, and life as wonderful as that of the whales and dolphins and seals. There are fishes that sail through the air so high above the water that we call them flying fishes. There are fishes that can crawl out of the water and walk overland. There are fishes that build nests at the bottom of the sea, creatures that build islands and sea-walls; and in cliffs and mountains we find myriads of skeletons of tiny creatures that once lived and breathed on the ocean-bed. In these pages we read of the many wondrous forms of life in the seas to-day.

THE WORLD IN THE WATERS

CONTINUED FROM 2218



NOT the wisest men on earth know the full story of the sea and its wonders. How can they? They have to seek knowledge from the things that their dredges bring up. That is as if we set to work to examine some great, deep lake by bringing up things from its depths in a teaspoon. However, patient work is constantly bringing new learning to us. We know that there is no place in the ocean where life is not possible. The waters of the equatorial regions and the seas of the temperate zone abound with life, but so also do the silent waters of the frozen Arctic Circle.

Nature will have no blank spaces. There is a place for everything, and we find everything in its place. We find, swimming upon the surface, creatures which cannot descend. In the middle depths we find fish which cannot come to the surface lest, without the proper pressure of water upon their bodies, they should burst. Those same creatures cannot descend beyond a certain level; and below these there are creatures which never see the light, fulfilling in the unlit depths of ocean the purpose for which they were created.

For the present it will be interesting for us to glance at some of the lowest forms of life in the sea. We shall find it as wonderful as anything in the whole of Nature's fascinating story. Let us consider the marvels of that class of tiny organisms called *infusoria*. They exist in fresh water and in the water of the sea. In a single cupful of pond-water, such as certain infusorians love, there may be more of them than there are people in the whole world. The rate at which they grow is astounding. One infusorian breaks up into two; two become four; four become eight; eight become sixteen, and so on, almost as we watch.

Given the proper temperature and nourishment, a single infusorian may become in four days the ancestor of a million like itself, in six days of a billion, in seven and a half days of a hundred billions. From that tiny speck we have in seven and a half days this countless host, weighing over 200 lb. Of course, the numbers do not work out like this, for there are merciful checks, or the whole earth and its seas would not hold the creatures that are born.

Floating upon the surface of the sea, and stacked high over its bed, are countless billions of these and similar tiny creatures, dead and living. Of what are the glorious white walls of England, the beautiful chalk cliffs one sees there, composed? Of nothing but the shells of the tiniest little creatures, which we call *foraminifera*. They were all living creatures millions of years ago.

They were born and had their day, and they died, piles upon piles of them, and their limy shells turned to chalk. And other white cliffs, which will some day rise above the waters, are still being built up beneath the sea to-day. The tiny specks of life in their little shells are still being born, and are still dying down in the sea, and they are forming ooze which will some day be solid chalk. It would take about ten millions of them to make a pound of chalk, but there have been enough to make millions of tons of chalk.

THE LITTLE INSECTS THAT BUILT UP THE STONES OF PARIS AND BERLIN

Some of the greatest mountain ranges, the Alps and the Balkans, consist largely of the shells of little creatures like these, called nummulites. Among the greatest wonders in the world are the Sphinx and the Pyramids in Egypt, built of dead nummulites. They grew in seas which ran where dry land now is. They formed the Arabian chain of mountains; from these mountains men cut the great blocks of which the Sphinx and Pyramids are composed. Paris is built of stone from a similar source, and Berlin stands upon foundations made up entirely of the skeletons of tiny animals.

In view of all this, we shall not be surprised to learn of the wonders of the coral builders. These are very tiny sea animals, which appear in their glory only in the warm waters of sunny seas. We all know what coral is, the beautiful pink polished substance of which necklaces, bracelets, and scores of pretty ornaments are made. We know what coral is, but the way in which it is made was for two thousand years a mystery.

THE LITTLE CORAL BUILDERS THAT WORK DOWN IN THE SEA

Long, long ago, men had been in the habit of bringing it up from the sea in nets and by other means. The common fishermen could not be expected to know a great deal about its composition, but the wise men thought they knew more, and they all agreed that coral was simply a sort of rocky flower grown in the sea. But how could a flower be hard? That was quite simple, they said. The fishermen told them that coral, when in the sea, was quite soft like any other flower, but that as soon as it reached the air it became as hard as rock. And for ages that was believed. But a man who wished to know more sent down a diver, who found, of course, that coral beneath the waves is as hard as coral above the waves. The good man could not believe the word of his diver, but went down in the water to see for himself.

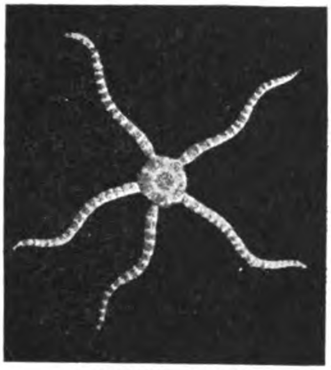
We know now that the coral builder is one of the tiny, tireless workers of the deep. The coral animals are as numerous as the stars of heaven. When born, they are quite soft, jelly-like little things. But they have the power to extract carbonate of lime from the sea-water, and to build with it the most wonderful structures to live in. As a bee makes honey, so the coral animals make lime, from their own food. They build homes of coral for themselves. A number of them work together, and they make their houses join by neat canals or passages. But there are many forms which the buildings take.

THE WONDERFUL ANIMAL WALL THAT RISES FROM THE BOTTOM OF THE OCEAN

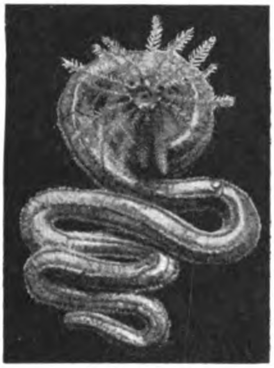
Some form the loveliest structures, looking like flowers. The colours are not always the same. There are browns and blues and greens, as well as the more common pink. This coral home is not made as a bird makes its nest, not as the mud plaster in which the rhinoceros loves to bury himself in a swamp; the coral is part of the coral animal itself. It issues from the soft interior of the little animal's body, and is its stony skeleton.

Countless hosts of coral insects working together join their skeletons or coverings to each other. They build up from the bottom of the sea, until they reach the top of the waves. They make great reefs or barriers in the sea where, before, the waves flowed unchecked. The coral insects build islands. They put a great ring of coral round a tract of water, and make a lake within the boundaries of their work, as we see in the picture on page 919. In places where they are most numerous they quite change the character of the sea. The buildings are the actual coverings of the coral insects' bodies. They become solid rock, forming dry land for thousands of miles in the sea. It is the most wonderful work that these little animals do by their own efforts.

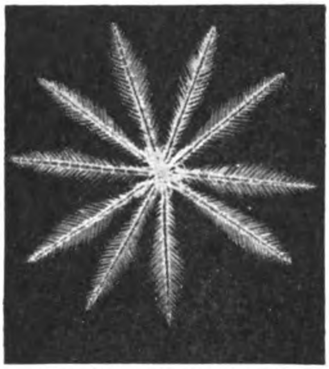
STARFISH & ANIMAL-FLOWERS OF THE SEA



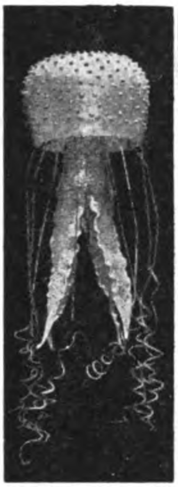
The brittle starfish



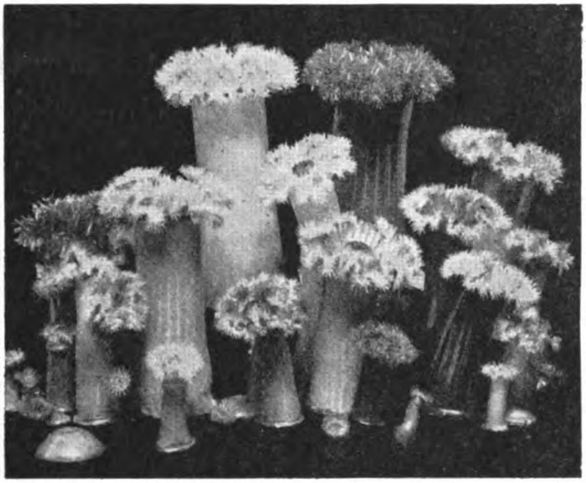
A big sea-slug



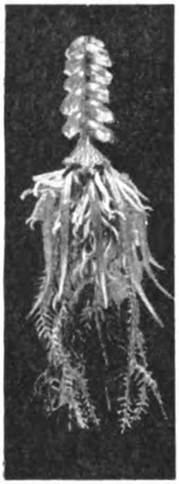
The delicate feather starfish



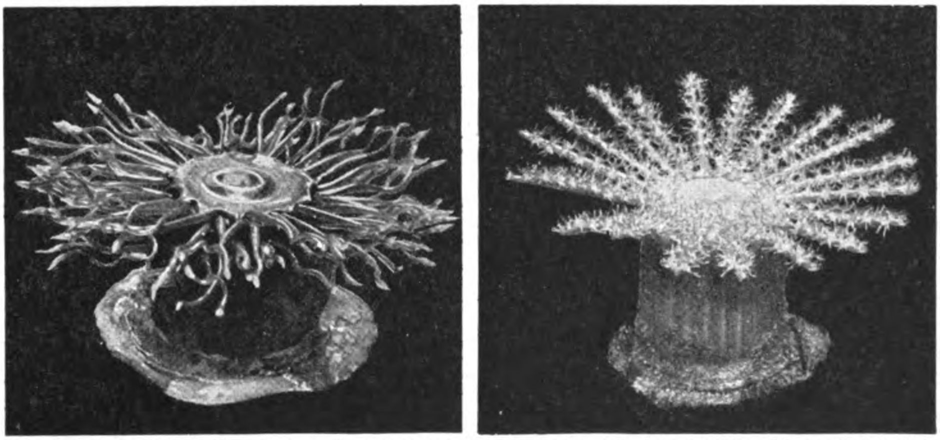
A “ man-of-war ”



A group of anemones, animals which resemble flowers, but hunt and kill



Colony of polyps



These are two remarkable pictures of sea-anemones, both shown with their mouths wide open and their tentacles spread out ready to grasp the little animals of the sea upon which they feed. These sea-anemones look like flowers of the fairest shape and hue, yet they are animals. They hunger, and hunt and kill living prey to satisfy their hunger. They take into partnership other animals, like the hermit crab, that can help them to get food. Riding on the crab's back, they help him to kill his victims, and then share the meal with him. The Portuguese man-of-war is a beautiful thing, but it stings painfully.

The photographs on pages 2334 and 2337 are by Mr. Arthur Ullyett, and the lower picture on page 2340 is from a photograph in Dr. Carpenter's book " The Microscope," by permission of Messrs J. & A. Churchill.

We have read in the story of the lighthouse, on page 737, how very difficult men, with all their skill and all their fine tools, find it to build a lighthouse in the sea, but here these tiny animals, working in the depths of the furiously tossing waves, build structures which have no likeness in the world. One of their works consists of a barrier reef along the shores of New Caledonia, 400 miles long, and another, along the north-east coast of Australia, 1,000 miles in extent. As a great man points out, this means a work by these tiny things beside which the wall of China and the Pyramids of Egypt are like children's toys. The work has been going on for many ages, it is going on to-day. Of course, the result is often very serious to ships, which run on to the coral reefs and get wrecked. But that should not happen, for we have charts of the seas to guard our sailors against wreck in such ways.

LIVING AND BUILDING AND DYING IN THE BLUE SEA

If they do damage in this manner, the coral builders are friends to mankind in another way—they provide homes for men where only the angry sea once appeared. Sea-worms of various sorts bore into the coral and loosen it, so that the waves break it up. The great waves pick up huge blocks of the loosened coral, and throw it high up on the reefs, grinding much of it to powder. Shells and sand collect and are ground up together by the action of the waves. The powdered mass collects in the crevices of the reef, and presently seeds blown from afar, or carried by the sea, or brought by birds, take root in the soil that has been slowly forming. Entire trunks of trees, that have been torn up and carried down the rivers and out to sea, find a lodging here. With these trees come small animals, like lizards and insects. Trees grow, sea-birds settle; tired land-birds, blown out to sea, take rest; and at last man comes, to find trees and fruit and birds and other forms of life. Here is a home ready made for him. He cuts down the trees and builds himself a house, and there we have a new part of the world prepared for human habitation. But the creators of it were the myriads of coral animals, living and building and dying in the blue sea.

Growing on the coral reefs and adding to their beauty, we find a great many sea-anemones. At first sight we should say that these are vegetable growths. Their very name suggests it.

THE LIVING FLOWERS THAT GROW ON THE LIVING WALLS OF THE SEA

The wood-anemone we all know, the pretty flower of our American woodlands. Surely, then, the sea-anemone must be our wood-anemone's cousin, growing in the sea? But the anemone of the sea is an animal, which can kill and eat other forms of animal life, and, by some process of instinct too mysterious for us to understand, can enter into partnership with other animals, just as birds enter into partnership with crocodiles, buffaloes, and rhinoceroses. This animal-plant or plant-animal, as we think it, grows in the most elaborate and gorgeous forms. A fairy wand could not create more charming pictures than the anemones present. Some of them appear to have a sense of sight, for what look like eyes appear. They depend, however, chiefly on touch for their food They have long, sensitive feelers, which look like petals or fringe. These, when anything fit for an anemone to eat touches them, close like a flash upon it, and draw it down the tube leading to the anemone's stomach.

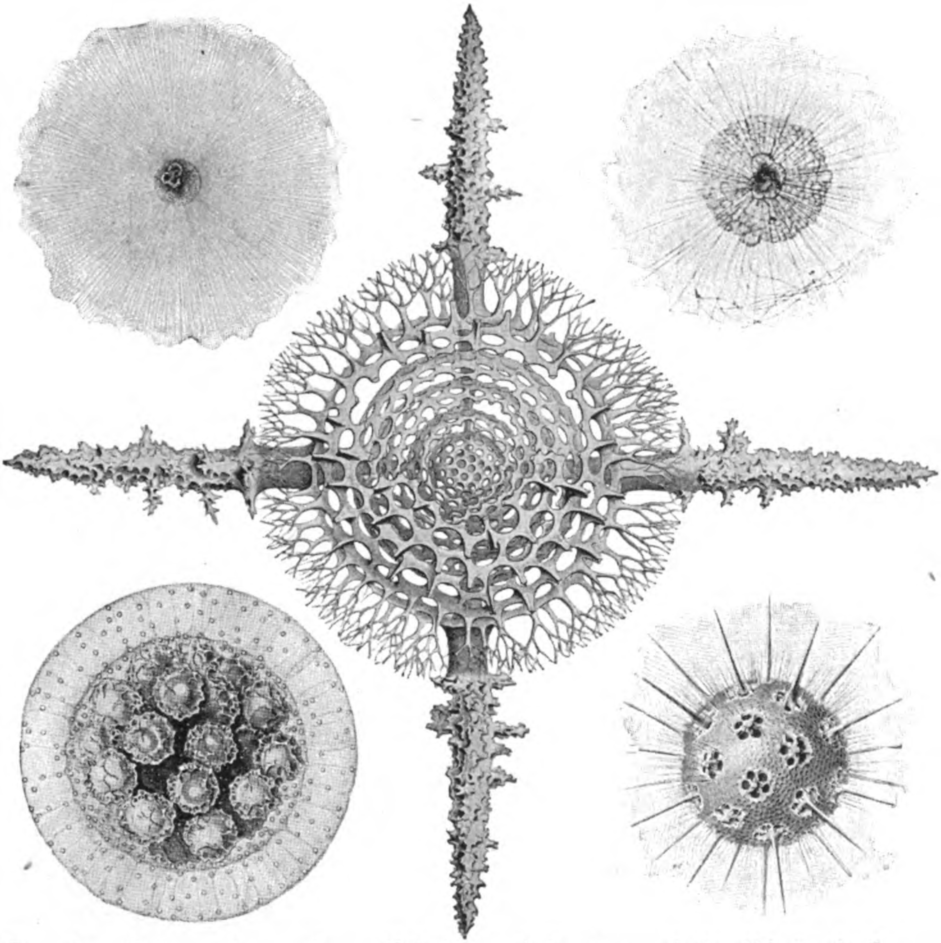
Let us watch them in a sea aquarium. The anemone, glistening and gay, grows at the bottom of the water, or on the side of the glass, like some extraordinary fringed mushroom with its head the wrong way up. There is nothing to suggest that this is a hungry little animal. But wait.

HOW THE ANEMONE LIVES WITH THE CRAB, & THE CRAB WITH THE SPONGES

A lively shrimp darts through the water. The tentacles of the anemone are instantly all of a quiver, ready to catch the little shrimp. The shrimp's instinct or experience tells him what that means, and he darts away if he can. But he cannot always do so. The anemone must live and have his shrimps, or other form of food, and the tentacles close rapidly in, causing the anemone to shut up like a flower which is going to sleep for the night. And if the effort made is quick enough, the poor shrimp is encircled by those terrible tentacles, and drawn in to make a good meal for the deceitful anemone.

There are countless anemones growing upon our seashores. Some look like rosettes, others like bobbins with a frayed, fringed top. The fringe of tentacles lies widely expanded, and we should never dream how quickly they can move. Let us touch the top of the anemone with a finger. It closes at once upon our finger, and we feel that each little spike of the fringe is roughened at the end, and gives a distinct pull at our finger, like the rasped claw of some insect. They are not strong enough to take in our finger, but they have received the necessary impulse which sets them at work. The anemone shuts up, believing—if we may use that word—that it has caught a meal, and for some minutes you will find that it will not attempt to reopen.

SOME OF THE WONDERFUL THINGS THAT GROW IN THE DEPTHS OF THE SEA

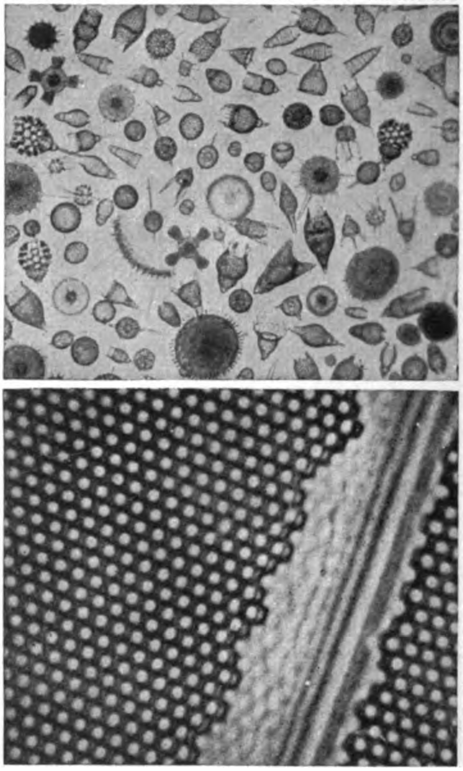


These five objects are the greatly magnified pictures of the minute animals which live in the sea, whose skeletons form our cliffs. Though they are so tiny, they are of the greatest beauty when seen through the microscope, and these pictures show the wonderful little creatures as the microscope reveals them.

It is a humble, lowly form of life, yet there seems so much purpose and set plan about the way of the anemone that we are bound to confess that we are amazed and bewildered at such apparent method and skill. But the wonder only begins here. The partnerships of the anemone are the most wonderful feature of its life. Let us consider for a moment Messrs. Crab, Anemone, and Co. We know all about the hermit crab, for we have seen its portrait and read of its doings on page 1416. Now, as we saw there, the hermit crab, while a vicious, quarrelsome little rascal, has no shell to cover his tail. That is the spot which his enemies attack. His one hope in life is, therefore, to win and retain a secure covering for his unprotected tail. He and the anemone seem to come to an agreement. The anemone affords him just the cover that he needs for his tail, and he in exchange rides the anemone about on his back.

The tentacles of the anemone are towards the nippers of the crab, and when he goes in pursuit of his prey, the anemone helps to kill it. The anemone has stings which paralyse or kill a little living animal. The crab has, therefore, a powerful ally to help him in killing his food, and as he eats, the anemone shares his meal. It is a profitable partnership. The crab gets his tail protected; he is largely hidden from his enemies; he is hidden, too, from the things that he desires to attack. The anemone is carried about, and is kept in constant touch with an ample supply of food. Thus we have a life partnership between the simple-looking plant-animal and a desperate warrior who is always battling.

SKELETONS OF THE LITTLE SEA WORKERS



The top picture is a group of the skeletons of very tiny animalcules called radiolaria. They are composed of a lattice-work of flinty matter, and they fall to the bottom of the deepest ocean and form what is known as Barbadoes earth. The lower picture is a part of the skeleton of one of their fresh-water cousins called diatoms, magnified 4,000 times.

The study of anemones is a most interesting one, and one which we can all pursue, for they abound wherever rocks strew our sea-washed shores. There is no room for us to consider here the many species known, but the pictures in these pages show us some of the wonders and beauties of several famous specimens. Think of them not as plants, but as animals, of which the larger will swallow a halfpenny, or perhaps a shell the size of a saucer, and then divide into two living animals rather than lose the booty it has managed to secure.

The anemone is not the only sea animal with which the crab goes into partnership. There is a certain sponge in which he makes his home. We know now, for we read all about sponges on page 1752, that those things are not vegetables, but animals. They admit the sea-water through the canals in their bodies. From this they extract tiny forms of life for their food, and at the same time take for their breathing the oxygen which the water contains. That is the way fishes breathe. They have no lungs, except in rare cases, which we shall have to read about in a later story. They have gills, over and through which the sea-water washes. These gills take the oxygen from the water, and pass it into the blood-vessels, so that the fishes may breathe as we breathe. The method is, of course, very different, but the purpose and result are the same. Well, that is the way in which the sponge, no matter what its name or size, breathes and feeds and grows.

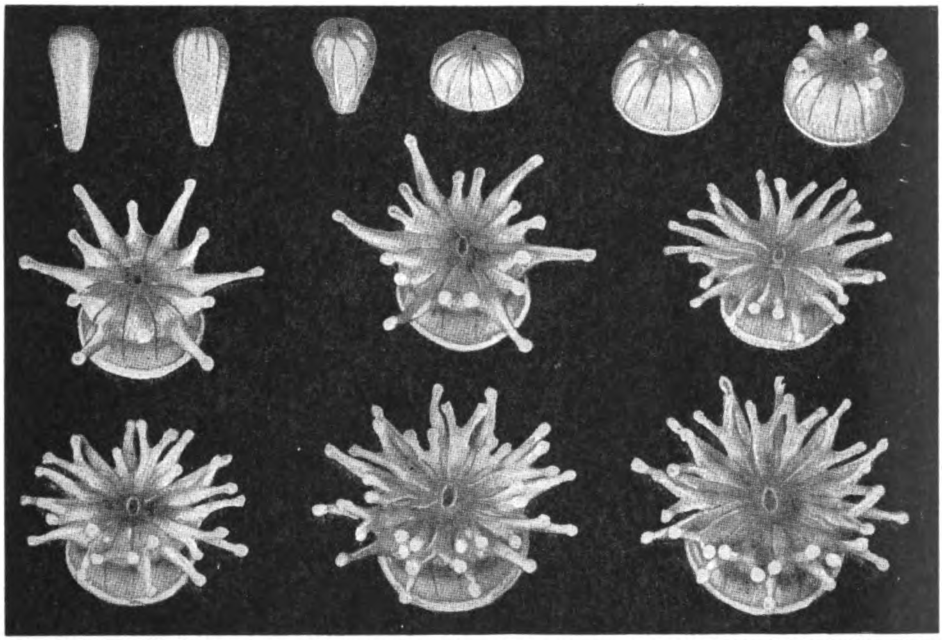
In some of the channels running through the sponge may be found the hermit crab. Higher up in the same channel may be discovered a little shell, and also a little worm. In this collection we have the history of four forms of life. First of all the hermit crab pops his naked tail into the empty shell left by a growing whelk. Then comes a young sponge, sent forth on its life-journey by its parent. It settles upon the whelk-shell in which the crab has sheathed his tail. There the sponge grows and grows until it quite covers the shell, but leaving open a channel by which the crab can enter and leave. Then as the sponge and the crab grow bigger they take into partnership a little worm, which is admitted into the interior of the sponge, simply that it may devour any refuse which may collect in the home of the crab. Even such humble things as crabs and sponges have to guard against unclean homes; they are as wise as, and more careful than, many human beings. And that is why we find the interior of the sponge occupied by a shell, a worm, and a crab.

Where the corals abound, fishes of the most brilliant colour are always to be found. The fishes protect themselves by becoming coloured like their surroundings, just as the animals do. But swimming with them are marvels of coloured jelly, as they seem. They are the jelly-fish. We may all see jelly-fish at the seaside when the tide goes out. Better still. on a favourable day, we may see hundreds of them floating on the sea as we go by steamer. Those round our coasts look like great white or transparent leaves, with a little dash of red in the centre, as though they had been darned with coloured wool. We do not have the jelly-fish of brilliant colour. They belong to the warm seas of the tropics. But the nature of all jelly-fishes is much the same.

Those of the tropics give off a brilliant silvery light at night, which helps to make the sea like a gleaming mirror of liquid metal. Ours are not so attractive. If we catch one and lay it on a piece of blotting-paper for examination, we have to be very quick with the examination, for the jelly-fish is composed largely of water, and it simply dries up before our eyes. They are not nice things to handle; they can sting very badly, as all sea-bathers know. The scientific name of the jelly-fishes and their kin is taken from the Greek word which means nettle, and sea-nettles is another English name for the jelly-fishes that sting.

By far the most alarming of the sea-nettles is the Portuguese man-of-war, or *physalis*. This looks like an inflated bladder, six inches long. Beneath it streams a number of organs, important to the animal in gathering and distributing food. The tentacles

THE GROWTH OF THE BEAUTIFUL CORAL THAT BUILDS WALLS IN THE SEA



These pictures show us the marvellous way in which a coral grows in the sea. Reading from left to right we see how the coral insect grows. First we see it when just born, and then gradually changing **its form, shooting out more and more tentacles. The coral is the limy covering which the tiny animal builds.**

By courtesy of the Scientific American.

which we most wish to avoid are those which carry the stings. These are intended to numb the prey of the physalis, but woe to the man who comes in contact with them. They flow out from the body of the animal some feet into the water, and are heavily charged with stings and a poisonous fluid. The merest touch from them will raise a white swelling on the hand, and for long afterwards the hand and arm experience an aching pain, which gradually extends to the muscles of the chest, causing some trouble in breathing. Even when they have been removed from the body of the physalis the stinging cables retain their power to injure, and from them issues a fluid which, after lying upon cloth for some days, has power still to sting.

The sea-anemones, the corals, the jelly-fish, and many other plant-like sea animals, all belong to the same family. We have another interesting family, including the starfishes, sea-urchins, sand-stars, brittle-stars, feather-stars, and so forth. Their very long name, which we need not bother about, means that they are enclosed in a tough skin in which lime is deposited, so as to make the covering into a sort of shell without actually being a shell.

THE WONDERFUL STARFISH THAT WALKS ALONG THE BOTTOM OF THE SEA

We have all seen hundreds of starfish at the seaside, and the pictures on page 1414 show us what the starfish looks like to the camera. There is not a simpler, more innocent-looking thing to be found by the sea than the starfish, particularly that commonest of all, the crossfish, as we call the five-fingered one. Yet it is really a rather wonderful creature. Its organs are in the centre of its body, and the fingers branch out from that centre. Now, the fingers are really the legs, for there are tubular feet underneath them by means of which they walk as comfortably along the sea-bottom as we walk along the beach.

The starfish has a terrible appetite, and oysters, mussels, scallops, and other shell-fish are its food. It seizes its prey with its long and strong arms or fingers, and, no matter how powerful the shell may be, by persistent pressure the starfish manages to force it open, and eat the fleshy interior. Fishermen hate the starfish with all their heart, and, when they catch them, tear them in two and fling them into the sea. That is not only cruel, but also very stupid. Though you tear a starfish in halves, the animal can recover. Each of the two halves heals and grows new fingers, and, instead of a dead starfish in two halves, you soon have *two* starfishes, fully equipped and very much alive.

THE SEA-CUCUMBER THAT THE CHINESE PEOPLE LIKE

The story of the sea-urchin we have already read, but we must remember that the picture that we see on page 1417 is that of only one of a numerous family of urchins. Sailors are glad enough to boil the urchin. They call it the sea-egg, and cook it in the same way as we cook the eggs of poultry.

What we call the sea-cucumber is, like all the other things we have been considering, an animal. Its other names are the sea-pudding, the sea-slug, and the trepang. It has the same sort of feet that the starfishes possess—suckers which protrude from tubes, and can get along over places which seem quite impossible to it.

The common name of the sea-cucumber suggests the idea which its appearance presented to those who bestowed the title upon it. The Chinese consider it a great delicacy for the table. There are many kinds of sea-cucumber, and the rarest fetch quite big prices. It does not sound quite nice to eat sea-slug, and we in this country are content to leave it to the Chinese, who like bird-nest soup, roast rat, and stewed puppy. But perhaps they consider the tastes of those who delight in turtle soup quite as strange as we take their own taste to be.

THE MYSTERY OF THE LOWEST FORMS OF LIFE IN THE SEA

We have now glanced briefly at some of the lowest forms of life in the sea. It is quite as wonderful as life among the higher animals. We do not expect much of animals that seem to be no more highly gifted with life than plants; but, as we have now seen, there is a mystery and fascination about these lowly creatures sufficient to make even the wisest men marvel at their habits.

The next stories of Fishes begin on page 2443.

The Child's Book of Its Own Life

THE STOMACH AND DIGESTION

AT the end of the last story, on page 2208, we left the food when it had passed through the mouth and entered the stomach. Here we learn what the stomach is and what are its uses. We learn, for instance, that just as the mouth and teeth protect the stomach from what is not fit for it, so the stomach protects the bowel from what is not fit for it. Then the stomach produces special chemical substances that change the food, and, besides all this, it churns the food for some hours after every meal, so that when it enters the bowel it is much changed, and is ready for the bowel to act on. The bowel itself is still more wonderful and useful than the stomach, and it is helped in its work by various glands, such as the pancreas and the liver, which pour their own special juices into it. Then the bowel passes into our blood what is fit for it, and by this we live. Nothing is of any use to us but what we absorb into ourselves—and this is just as true of what we hear and read as of what we eat.

HOW TO EAT & BE HEALTHY

CONTINUED FROM 2208

WE have seen how the food, properly chewed and mingled with saliva, is swallowed, and so finds its way into the stomach. This is the largest and most important of the hollow organs of the body; but when we call it hollow, we must not fancy that it is something like a football, with a great space inside it. There are no such unfilled spaces in the body; and when the stomach is empty, as it should be for some time before every meal, its walls are pressed against each other. When food enters it, they make room—and the greater the supply of food, the more the stomach enlarges in proportion. A healthy stomach always accurately fits its contents.

The stomach is a muscular bag which lies in the abdomen—that is, the part of the body which we usually call "the stomach"—rather to the left side, and under the left part of the liver, which is the largest gland in the body. This bag has two openings in it—one on its upper side, which is the opening of the gullet and admits the food; and one on its right, where the stomach becomes narrow and almost pointed, and leads into the bowel. The walls of this bag are beautifully made, first of a very smooth coat on the outside, which enables it to move freely against its neighbours; then of a middle coat, which is made of muscular fibres; and finally of an inner lining, a mucous membrane, which is wonderfully skilful.

The middle or muscular coat is made of three layers of fibres running in various directions, and it has most important duties. It *churns* the contents of the stomach. When we have eaten anything, these various fibres start moving in a regular way, for a long time—even three or four hours—sending the food from end to end of the stomach, backwards and forwards, and turning it over so that every part of it can be properly digested. Also, as the walls fit closely on to the food, whether we have taken much or little, they help to crush and soften it. But the stomach possesses no teeth, and its walls are thin, and far less powerful than the thick muscular walls of the heart. A bird has no teeth, but its body has special powers to make up for that. If we do not use our teeth, the stomach cannot do their work for them; but its muscular wall does its best. When we are well, we are no more aware of these movements than we are of the ceaseless beating of the heart.

If people eat too quickly, and do not chew their food enough, and especially if they also eat large meals, the muscular coat of the stomach naturally gets tired and stretched and flabby, and cannot churn the food properly, and then we get indigestion; but this never happens if the stomach is properly treated, and if we keep our blood in good order, so that the muscular fibres are well nourished by it.

THE WONDERFUL LINING OF THE INNER COAT OF THE STOMACH

The inner coat, or lining of the stomach, is still more wonderful. It is a mucous membrane—that is to say, it has tiny glands in it which produce mucus. But that is not all. It also has, at least, two other sorts of little glands in it. These glands are little pits, or tubes, in the lining of the stomach, lined with living cells which have a most remarkable power. One sort of these glands produces the substance which we studied on page 1797 under the name of hydrochloric acid. We have already learnt that a salt is made of an acid and an alkali combined. Now, table salt or common salt is sodium-chloride, and it is a necessary part of the food of all living creatures, including ourselves. In us, and in a large number of animals, it is the source of the hydrochloric acid produced by the "acid glands" of the stomach.

The sodium-chloride, or salt, is brought to the cells of the glands by the blood, and they split it up into its two parts, acid and alkali. The acid they pour into the stomach, where it serves a most important purpose in digesting the food. If a chemist desires to split up sodium-chloride outside the body, he can do so, but only with a great deal of trouble and by the use of very powerful substances which are not found in the body at all

A THING THAT NO MAN UNDERSTANDS AND THAT MEN CAN ONLY MARVEL AT

No one understands at all how it is that this very strong compound can be split up by the cells of the glands in the stomach, without any difficulty or the use of any powerful acids. We can only put it down to the power of the life of the gland-cells, and marvel at it.

Sometimes, when people are ill, their stomachs cannot produce the hydrochloric acid they need to digest their food, and then the doctor gives them hydrochloric acid as a medicine. It enters the stomach, and does just what is needed; and in such cases its effect in making the person better is almost like magic. Such persons owe their relief to the study of the body, which has taught us that the stomach, when healthy, produces this acid, and that our food cannot be digested without it.

Every time we take salt at our meals we should remember what use the gland-cells of the stomach will make of it—not at once, but when it has entered the blood, and has been carried by the arteries to nourish and supply the stomach wall.

The second kind of special gland in the stomach—and neither kind is found anywhere else in the body—is no less wonderful. If we look at the cells of these glands under the microscope, as they are *before* a meal, we find a number of little specks of something lying in them. These specks have been made by the cells—from the blood, of course. But if we look at these cells, taken from an animal *after* it has had a meal, we find that all the specks have quite disappeared.

THE LITTLE SPECKS OF PEPSIN AND THE WORK THEY DO AFTER A MEAL

The reason for this is that, about half an hour after a meal enters the stomach, these specks of stuff are melted by the gland-cells and poured into the stomach, where they are mixed with the food as it is churned. These specks of stuff consist of a *ferment*, called pepsin, without which the stomach cannot digest the food. Often, when people are ill, and their stomachs are not making pepsin properly, we take the stomach of a calf, get the pepsin out of it—it is got as a yellowish powder—and give it as a medicine to the ill person. This enables him to digest his food; but it is really the cells of the stomach of the calf that are digesting it for him.

If either hydrochloric acid or pepsin be given to a healthy person, his stomach ceases to produce them for itself. This is another instance of the great law of all life, that the health of any part of the body can be maintained only if it does its own work. If its work be done for it, it becomes lazy and helpless. Pepsin can easily be got at any drug store, and many unwise people now dose themselves with it, not knowing that they are thereby preventing their own stomachs from doing their own work. When you start taking pepsin regularly, then you must go on doing so, for your stomach is made lazy and incapable. The only right time to give pepsin—except for a very short period—is when we know that the stomach has become quite unable to make it for itself.

HOW STARCH IS TURNED TO SUGAR IN OUR BODIES

Now we must see what the hydrochloric acid and the digestive ferment pepsin do to the food. First, we must know that, for about half an hour after a meal, these things are not produced at all. During that time the starchy matter of the food is being turned into sugar by the ferment which the saliva brought to it. When that is sufficiently done, the stomach pours forth its own products, and then the digestion of the starch must cease, for it can occur only when the food is alkaline—which the alkaline saliva makes it—and so it must cease when the contents of the stomach are turned acid by the hydrochloric acid that is poured into it. Now begins the second stage of digestion in the stomach. The hydrochloric acid first acts upon certain parts of the food, and makes them ready for the pepsin. The pepsin then ferments or digests them, until they are changed into new substances which are fit to be taken into the blood.

Thereupon the stomach opens its door into the bowel, which is guarded by a strong ring of muscle and has been tightly shut all this time. The stomach contents pass through into the bowel, a small quantity at a time, then a pause, then another dose, and so on, until the stomach, which has been shrinking again all the time, becomes empty.

THE USES OF THE STOMACH, AND HOW LIFE IS POSSIBLE WITHOUT IT

Thus we can learn the uses of the stomach. It is a place where the saliva can digest, or begin the digestion of, the starch of the food. It is a bag which holds a quantity of food and takes care of it, so that we can eat a meal and go about our business until we need another. It is a guardian of the health and right working of the bowel, for it admits nothing but soft, almost liquid, stuff to the bowel, and that only in suitable quantities at a time. And it is a living bag which, by its living power, produces ferments to digest the food, and churns the food about so that these ferments can get to every part of it. As a matter of fact, the stomach produces more ferments than one, and more acids than one, but we have named the principal ones.

We usually rather overrate the importance of the stomach, notwithstanding all its powers. It is quite possible to live happily and healthily without a stomach at all, when the stomach has been entirely removed by an operation, and the food passes straight into the bowel from the gullet. Of course, in that case people must take small meals, and certainly they must use their teeth well.

The food is digested in the bowel, and we shall have to learn that the digestion which goes on in the stomach can be done without, and is never the most important part of digestion. All the digestion that the stomach does, and that the saliva does, can be done entirely within the bowel. This is not to say that the saliva and the juices of the stomach are not important and valuable; but it is to say that, in this all-important matter of preparing the food for its entry into the blood, the body has more than one or two or three "strings to its bow," as people say.

THE TUBE WHICH DISPOSES OF THE USELESS PART OF OUR FOOD

The three classes of our food that require digestion are the proteids or albumins, the starches and sugars (called carbohydrates), and the fats. The first group are partially digested in and by the stomach; the second group are partially digested in the stomach, but not by it; the third group are not digested in the stomach at all. Thus the fat in milk, which, when it rises to the top, we call cream, undergoes no change in the stomach, but floats to the top of the food there as it does in milk. There is only one part of the body that can digest everything properly, and that is the bowel.

The bowel is a very long, coiled tube, which begins where the stomach ends, and ends in a straight part called the rectum, where the useless part of the food, and also a substance called the bile, which the liver sends to the bowel, is collected and disposed of every day by healthy persons. This is not a subject that people think it suitable to talk about much; but it is a very wrong and improper thing to think it an improper subject of study or knowledge. It is part of the wonderful working of the body, and just as perfect and worthy of our admiration as breathing or the beating of the heart.

THE LONG TUBE WITH THREE COATS WHICH RECEIVES OUR MEALS

The bowel is some twenty-five or thirty feet long, and this extraordinary length teaches us that it must have some very important work to do, which requires time and thoroughness. Every meal we eat spends from twenty-four to thirty-six hours in the bowel, being digested all the time, and sorted out and prepared for use and for the disposal of what cannot be used.

The bowel, like the stomach, has three coats, and they are of the same kind. The middle coat, however, is made of muscular fibres that mostly run right round the bowel or tube, in circles—not of fibres running in all directions. The reason for the difference is that the contents of this long tube do not require to be churned backwards and forwards, for the stomach has already softened them and made them almost liquid. They require merely to move slowly onwards, and the circular fibres of the muscular coat of the bowel contract, one after the other, in a slow movement like a sort of wave. We are quite unaware of these movements, though we can often hear the curious little noises which they make as they send the food along. Sometimes—as when we have eaten green apples, or have not properly chewed our food—the bowel makes these movements rather strongly, and *then* we become aware of them, and say we have stomach-ache or "colly-wobbles"—a very expressive word—or colic.

THE WONDERFUL GLANDS AND THE WORK THEY DO IN DIGESTING OUR FOOD

But it is the inner coat or lining, the mucous membrane, of the bowel that is specially wonderful and interesting. Besides the glands that produce mucus, like those in the mouth and nose and many other places, it has a large number of special glands which produce digestive ferments for fermenting, or digesting, the food. Already we know quite a number of special ferments which different parts of the bowel produce, and there are doubtless many more. But the bowel does not produce the most important and powerful of the digestive ferments any more than the stomach does. They are produced by a special gland called the pancreas, which we find in all animals that have backbones, and which sends its juice through a special little tube that opens into the bowel about four inches below its beginning—so that the food from the stomach is very soon exposed to the action of this remarkable juice.

The pancreas of the ox is often eaten as a great delicacy, especially by people who are ill, and by people who do not mind paying a good price for what they eat—and it is usually known as sweetbread. The juice of the pancreas, or sweetbread, contains at least four ferments, three of them being the most powerful ferments that we know. One of them digests albumins or proteids, one of them digests starch, and another digests fat. This is the first time the food has met anything that can deal with the fat or oil in it, which is one of its most valuable parts. Neither the saliva nor the juice of the stomach is of any use in dealing with fats.

THE CELLS OF THE PANCREAS AND THE WAY IN WHICH THEY HELP US

The cells of the pancreas are not unlike gland-cells seen anywhere else. They, too, have specks of stuff in them which they have made, and which they melt and pour through the tube of the pancreas into the bowel when food enters it. The food, when it leaves the stomach, is acid, and this acid, when it enters the bowel, is the signal to the pancreas that its juice is wanted. If, for any reason, the juice of the pancreas is not forthcoming, we find that the person cannot digest and use the fats in his food. All his digestion suffers, but the digestion of fats suffers most, for there is nothing to take the place of the juice of the pancreas in this respect.

The liver sends its own product into the bowel, as the pancreas does, and just at the same place. This product has the special name of bile; and when anything is wrong with its production, we say that the person is bilious. The bile is brownish yellow in colour, and its colour is due to the remains of the red matter, or hæmoglobin, of old red blood-cells that have been broken down in the liver. The bile is a help to digestion in many ways, though it does not contain any ferments. It seems to prepare the fat of the food for the juice of the pancreas to act on, and it does this by breaking up the fat into a number of very tiny drops which can easily be acted upon and digested. We say that it turns the fat into an "emulsion." Also, the bile is very poisonous to microbes. So, indeed, is the hydrochloric acid produced by the stomach, and, as a general rule, if our stomach and liver are healthy, their products destroy all the dangerous microbes that we may happen to swallow.

HOW THE STRENGTH OF OUR FOOD ENTERS INTO OUR BLOOD

Now, when the food has been digested and turned into new chemical substances which are fit to enter the blood, the part of it which is of no use—such as the hard and almost woody stuff in the stalk of a cabbage—is passed along the bowel until at last we get rid of it. But now the useful, digested part of the food has to enter the blood. This it does in a very special way. Throughout many feet of the bowel, we find a new kind of thing occurring in its mucous membrane. These things are little projections—there are countless thousands of them—which stick out a little towards the inside of the bowel. They are covered with a layer of cells, and are richly supplied with capillary blood-vessels. Their business is utterly different from the business of any of the glands we have been reading about. They exist not to digest the food, but to absorb it—to take it into the blood when it is digested.

THE THOUSANDS OF CLEVER LITTLE CELLS THAT PASS THE FOOD INTO THE BLOOD

The whole object of eating is to get into the blood the substances it requires. Everything else is meant to prepare the food for its absorption into the blood. The cells covering these tiny projections of the mucous membrane of the bowel are alive, and extraordinarily clever. They pick up from the contents of the bowel what is ready for the blood, and pass it through themselves and through the thin walls of the blood-vessels that are pushed in little loops into the projections, and then it is carried by the blood-stream to every part of the body. We can take a piece of the mucous membrane of the bowel of an animal, and if we keep it warm we can watch it *living* for a time.

We can see, then, how the cells covering these countless little projections do their wonderful work, and we notice the very curious fact that, while they pass into the blood all the other parts of the food that has been made ready for them, they do not pass the fat into the blood. The fat is passed into another set of tiny vessels called *lacteals*, from the Latin word for milk, which is *lac*, and so it is carried upwards through the body until the lacteals pour the fat into some of the large veins that lie near the neck. The lacteals have this name because, after a meal, they look as if they were filled with milk. It is the drops of oil or fat in them that give them this milky appearance. We do not know why the fat of the food should have this rather roundabout way of getting into the blood.

HOW WE MAY EAT WITHOUT GAINING STRENGTH

And now we must learn the great lesson that we live not by what we eat, but by what we absorb. If a man were to eat the best food in the world in large quantities every day, but were not to absorb it into his blood, he would die of starvation as surely and as quickly as if he ate nothing at all. The food is of no use so long as it is in our mouths or in our stomachs or in our bowel, but only when it is in our blood. If it does not enter the blood it is all wasted, and until it enters the blood it does nothing for us.

Foolish people who have something the matter with the wonderful machinery we have described, or who do not care whether they eat too much so long as it tastes nice, may be surprised that their food does not give them strength. They forget that we live only by what we digest and absorb, and that may be very little, though we eat very much.

And other foolish people do the same with their minds, or, most of them, with the minds of children. Grass is good food for an ox, for the ox can digest it. It is useless and worse than useless to us, for we cannot digest it, and if we cannot digest a thing it does not matter how steadily we eat it. A child's mind can "inwardly digest" only certain things, and only those things are of any use as food for its mind. If other things, which it cannot digest, are given to its mind—such as lessons or hard books fit only for grown-up people—then it gets indigestion; it loses its appetite for learning, and it gains nothing at all. You might as well feed a child's body on grass, as feed its mind on some of the things which children's minds used to be fed with, and, I am afraid, are still sometimes fed with. If what we have been reading about here cannot be digested by your mind, it is worth no more than if the paper of this book were given to you for your supper or your breakfast. You might chew it ever so well, but you could not digest and absorb it; and you would die of starvation.

But all this does not mean that you are to do nothing for yourself. The body has to work hard and steadily after we take a meal, or it cannot be digested. If it is not digested, it cannot be absorbed, and we must die of starvation. In just the same way the mind must work after a meal.

WHY THE MIND NEEDS FOOD AS WELL AS THE BODY, AND HOW TO FEED IT

As we have seen, the food of the mind must be of a kind that the mind can work upon; but when we have seen that the food is of the right kind, and when your mind has got it, then it is for *you* to digest it. No one can do that for you, any more than your father or mother can digest your dinner for you. They supply the dinner, but it is of no use unless it is digested and absorbed, and you alone can do that.

They can supply you with food for your mind, and the right sort of food, but you alone can digest it. If you do not digest and absorb the food for the mind in this book or in any other, it may please you at the time, just as useless or even poisonous food may please the mouth when we eat it; but it will be of no real use, and will be worth nothing for the life of your mind, which is the life that your body exists for.

So the great question is: *How can we digest our mind's food?* And the answer is, first, by *thinking it over*. Just as the tongue and the stomach, and the muscular wall of the bowel, turn the food over and over, so we must think over the things we read and hear. Then they are ready for digestion. Digestion is turning the food into other things best suited for absorption. Well, you must change what is said in this book into *your own words*, look at it in your own way, think it out over again for yourself; throw away anything you find bad or useless, as the bowel does with the food; combine what you learn in the story of life with what you learn in the story of the earth—and so gradually these lessons will become absorbed into your mind.

FOOD GIVES THE BODY STRENGTH; FOOD OF THE MIND GIVES US LIFE & POWER

Then, just as the food, entering the blood, gives life and power to the body, so what we learn, when it is really absorbed into our minds, gives them life and power; and just as the body, supplied with food, is ready to act and to move, so the mind, if it absorbs good mind-food, is made fit to act—to think new thoughts and to guide our conduct.

One thing more. The body needs a new supply of food every day from birth to death. It does not do just to eat when we are small and then to stop when we grow bigger. We have to take in fresh food all our lives, or our lives will end. The same is true of the mind. It does not do only to learn things at school, and then to stop. There must be new mind-food for the mind all our lives, as there must be new body-food for the body all our lives. If not, the mind will starve and pine, or even die. There are too many people in the world who take great care to go on feeding their bodies, but who have long ago stopped feeding their minds, or who feed them only with food which is not nourishing, and cannot be absorbed, but is forgotten; and their minds *do* starve and die.

THE DIFFERENCE BETWEEN THE BODY & THE MIND, WHICH GROWS FOR EVER

But if we are wise we go on feeding our minds; and we discover the wonderful fact of the mind which makes it different from the body, though we have seen how similar are the laws of the two. This difference is that, though the body stops growing after a time, so that the best food, perfectly digested and absorbed, will not make it any taller or stronger, the minds of human beings, if daily fed with good books and thoughts and talk, beautiful sights, and noble music, will go on growing, getting wiser and better, as long as we live.

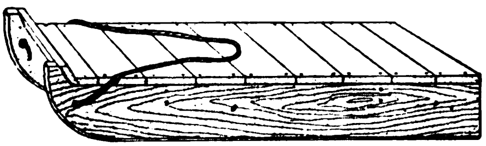
The next part of this is on page 2437.

THINGS TO MAKE AND THINGS TO DO

MAKING A SLED

CONTINUED FROM 2260

A TOBOGGAN is a sort of simple sled or sleigh that affords boundless delight and healthy exercise to children who live in lands where deep snow is as common as it is in our Northern winter. And we would find a toboggan a source of immense pleasure if by chance we should have one of the old-fashioned Christmas-card sort of winters, with its heavy snowdrifts, and soft, clean snow lying several inches thick in the meadows and lanes, but particularly on the steep slopes, for it is there that children can use the toboggan. Toboggans were first made from curved birch bark by the North American Indians.



1. The sled

There are several kinds of sleds. One is made of iron or steel like a sleigh; the other sort is made of pieces of board nailed together. This latter kind is very easily made, and we shall make one of them. Toboggans are good when the snow is quite soft; but as it soon hardens as we glide down a few times, we shall find the sled to be very satisfactory.

2. The sled gliding downhill

To make one you must first get two pieces of board about four feet long, six inches wide, and one inch thick. These you must cut to form the two sides, as shown in picture 1. Now you must get some more wood and cut it into lengths of twenty inches. This wood should not be more than half an inch in thickness. As each piece is cut it should be nailed to the long pieces in the way shown in picture 1. The piece in front may be a little narrower than the others as it is fixed to the turned-up part. Look carefully at picture 1 and you will see two pairs of nails on the side, a little way below two of the top boards. These nails hold in position two pieces of wood stretching from side to side so as to strengthen the sides. Any boy could make a simple sled like this in one afternoon. Probably the wood could be got from old boxes, but if not, a carpenter would sell all that is necessary for a few cents.

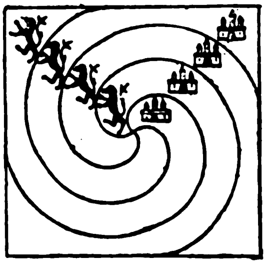
The best way to show the way to use the sled is to tell how it is used by the Children of the Snow, as we may call the boys and girls in Switzerland, Norway, and Canada, where such a sled is an article of everyday play in winter time. Every child has one of them. A merry party goes to where there is a good long, steep slope covered with snow. Then, one after another, the children sit upon their own sleds, and starting at the top of the slope let them slide right down to the bottom, guiding them meantime by touching the snow with their feet; and when the sleds stop at the bottom, the children walk up the slope again. Sometimes several sleds are made into one long file. One boy, generally the eldest, goes first. He sits or lies on his sled and then another boy gets on his sled and puts it close behind the first. He stretches out his legs so that the leader can hold his ankles. All the others do the same in turn till there is a string of children on their sleds. From a little distance the long line looks like a big black snake. When they are all ready, the first boy shouts to them all to hold on tight, and then he lifts up his feet and away they all go. The long line winds to right and left down the steep snow-road, and sometimes it goes faster than any train.

If any let go and fall off they are left behind in a moment, for the line of sleds goes at such a rate that it cannot be stopped easily. Sometimes the children who fall off go plump into the soft snow and are quite buried in it, but in a few seconds they struggle out again laughing. Sometimes the whole line of swift sleds will upset, and then you see twenty or thirty children and their sleds mixed up together, and laughing so much that they cannot get on their feet again. They never get hurt, for the snow is so soft that when they tumble it is just like falling into a feather bed.

It is all fun, and they love it. The Children of the Snow would not like to live in countries that have no proper winters. They would not like warm winters at all. But even in the Southern States we sometimes have snow on the ground for a little while, and so, if you feel envious of the fun the Swiss children have, you ought to make a toboggan and so be ready for the first chance that comes to try these jolly winter frolics of the colder lands.

HOW THE WEAVER CUT HIS CLOTH

THE friends of the weaver, whose problem was given on page 2260, had to confess themselves unable to find the manner in which the cloth must be cut in order to get the desired result, although all tried to solve the puzzle. So the weaver showed how to do it, as seen in the picture which appears herewith. It will be observed that, although there seem to be many lines, the cloth was cut into four pieces, each piece being of the same size and the same shape, and that each piece contains a lion and a castle. To prove that each of the four pieces is the same shape, we may trace the picture and then cut out the pieces, after which, by placing the pieces on the top of each other, we will find that they fit each other exactly. It will be observed that, although each piece has a lion and a castle, in each piece the lion and the castle are in quite different positions. This is essential to the solution. It is impossible to cut the cloth correctly in any other way.



THE PROBLEM OF THE MAGIC SQUARE

IN olden times magic squares were thought to have special virtue, and were used or worn as mascots to keep off disease or bring good fortune to their possessors or wearers. The peculiar feature of a magic square is that, whether the figures in it be added up by vertical columns, by horizontal rows, or by the two diagonals—that is, the sloping columns from opposite corners—the total is the same in every case. Here is a square which is not a magic square, because the figures that make up the vertical columns, the horizontal rows, and the diagonals do not, when added up, make the same totals. But by cutting the square into four pieces, and by putting these four pieces together again in a different way, a magic square is formed in which the addition of each row, each column, and each diagonal gives in each case 34, neither more nor less. This is one of the interesting puzzles propounded by Mr. Henry E. Dudeney in his interesting book of problems called "Canterbury Puzzles." How can it be done?

1	15	5	12
8	10	4	9
11	6	16	2
14	3	13	7

HOW FAST DO YOU WALK?

THERE is a very simple way of telling at what speed one walks. Take a piece of thin string, say, 80 to 100 yards long. To one end tie a weight—a piece of lead or other metal, or even a stone. At a point 44 feet from the weight put a knot or a loop. Then put a second knot or loop 44 feet from the first, and so on along the entire length of the string put a series of knots or loops 44 feet from each other.

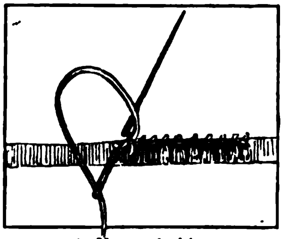
Take in one hand a watch with a second hand. Now drop the weight upon the ground, and walk along at an ordinary pace, letting the weight remain where it fell, and allowing the knots or loops to slip through one hand. The number of knots or loops that pass through the hand in half a minute are the same as the number of miles walked in an hour.

It is always well to know the reason for what we do. It is not enough to know that the number of times we walk 44 feet in half a minute is the same as the number of miles we walk in an hour. We ought to know *why* it is so. The reason is that 44 feet is the 120th part of a mile, because a mile contains 5,280 feet, or 1,760 yards, and a half-minute is the 120th part of an hour. Therefore we are able to walk 120th of a mile just as many times in 120th of an hour as we can walk a mile in an hour.

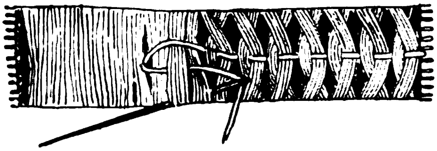
A DAINTY AFTERNOON TEA-CLOTH

Let us see what we want to make the charming little drawn-thread-work tea-cloth, illustrated on the next page. We want a piece of linen, about a yard square—not too fine, as the finer it is the more difficult it will be to work—and a skein or two of the Teneriffe cotton especially made for this kind of work, which can be bought at any needlework shop.

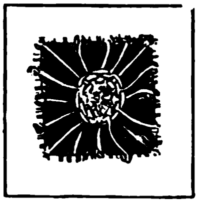
The first thing to do is to measure the hem. A fairly wide one is necessary, so we will allow six and a quarter inches. The quarter of an inch is for the little piece to turn in, and the six inches, doubled into two, will give us a hem of exactly three inches. When we have measured our hem we cannot turn and tuck as in ordinary work, for our corners must be left loose to draw the thread, but we mark the size of the hem by drawing one thread exactly where we shall sew the hem later on. As a matter of fact, we want more than one thread for the hem, but in all drawn-thread work the insertions are worked first, and this is what we will proceed to do.

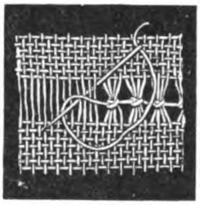

1. Hem-stitching

The insertion as shown in the picture is really the very easiest work that can be devised, and can be done by any child who is able to sew well. We begun by removing, in one direction only, as many threads as necessary. This, of course, leaves nothing but loose strands, and it is the uniting of these into clusters which is called drawn-thread work.


2. Single crossing

First of all, however, it is necessary to measure the space which must be left between the hem and where the insertion is to be, especially if it is desired to work a fine feather-stitching as shown in picture 5, which will greatly increase the value of the work. This fancy feather-stitching has already been explained on page 717.


3. A corner


4. Knot-stitching

Once the space has been decided upon, draw a thread very lightly on each side at the given point. If we want our cloth to be perfectly square we must take the trouble to count our threads, and if the linen chosen is coarse enough this will give very little trouble.

This one thread drawn on each side will form at the four corners where they meet a little pinprick of a hole. This is to be a little empty square, which we will later transform into a pretty wheel. For the moment we will use it as a landmark, and, inserting the point of some sharp scissors, we will cut the linen very straight, following the woven threads for two sides of the corner—that is, one inch on each side of the pinhole. We must repeat this at each corner. Now, to prevent these cut threads becoming loose on the sides of the material forming the corner, we will immediately work a loose buttonhole stitch as shown on page 457. This will save a considerable amount of trouble, and will keep the work neat and tidy.

Now comes the most fascinating part—the drawing of the threads. By fraying out the cut part which faces our buttonholed edge, we shall have just enough hold on the threads to draw them out easily. We must not try to draw out several threads at once, for the weaving is done in threads which cross each other, and if we pull two at the same time they will press one on the other, so keeping each other in place. All the long threads being drawn out along the one-inch cut will leave us a band of loose upright threads, and on these threads we will set to work.

For a beginner few patterns are really simpler than the one which is known as *single crossing*. For single crossing, reckon the strands—that is, each lot of upright threads to be taken up with the needle—in sets of five. Two sets are necessary for each pattern. Now we must thread our needles with a long thread, and start in the middle of the buttonhole edge at the extreme corner of the band of loose strands, as in picture 2. Bring the needle down over two sets, back up under the lower and over the upper of these sets; then go down again behind the upper and lower sets, and out below them. The thread is now drawn up, and the two sets crossed. If we repeat all along, our work will look like the insertion in picture 5.

A very useful stitch in the drawn-thread work is knot-stitching, so called because the thread is formed into a knot. This knot is a kind of chain-stitch, made by bringing the threaded needle out on the right side of the work at the top of the material, then bringing the thread down across the loose strands of the material and up again to the right. This forms a loop which is held down at the bottom by the left thumb. Next insert the needle to the left of the thread and under the strands to be enclosed, then through the loop, thus forming a knot to be drawn tight, by moving the thumb and pulling the working thread through. This knot-stitch is most used in hemming drawn-thread work, and is the one shown in picture 4 on this page.

When the insertion, as already explained above, has been done all round, turn in the edge of the material, fold the hem down in the usual way with the quarter-inch inside, and tuck it neatly all round, exactly along the line of the first drawn thread. The corners must be turned very carefully, otherwise they will feel thick. The open ends will have to be sewn over in little fine over-stitches. Now, we cannot work a hem-stitch without more threads being drawn, so we will again use the point of the sharp scissors and cut as many threads on each side as will be necessary to make a suitable hem—about four or five threads will be sufficient.

Hem-stitching is shown in picture 1. This is how the stitch is worked. Thread a needle with a long piece of cotton, and fasten it to the upper edge of the loose strands, at the right-hand end of them, by taking a couple of stitches, and bring the needle out three threads above the loose strands and threads. Insert the needle into the loose strands, exactly under the place where it last came out, and take three strands upon it from right to left, keeping the cotton under the needle. Draw out the needle; insert it again where it last came out, but this time bring it out three threads above the loose strands, to the left, taking up exactly the same three strands as before.

5. Tea-cloth trimmed by drawn-thread work

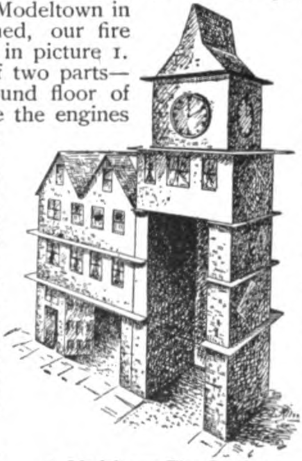
But what about the corners? When bands of openwork are carried along two sides of a piece of work, a space or "open square" is formed in the corner where the lines of work meet. In ordinary hem-stitching this space is so small that it may be passed over, but where more strands are drawn a filling is necessary, and this usually takes the form of some such wheel as shown in picture 3.

The foundation strands, or spokes of these, are the continuations of the working threads that have been used along the single crossing insertion. Two or more threads are then put right across from corner to corner, and the wheel is worked from the centre. The needle has to be taken alternately over and under one of these spokes, formed by the crossing threads, close round the centre until this has been surrounded four or five times. The needle is linked through the last round of the thread, between the spokes, and the thread is taken across to the vacant corner, where it is fastened off.

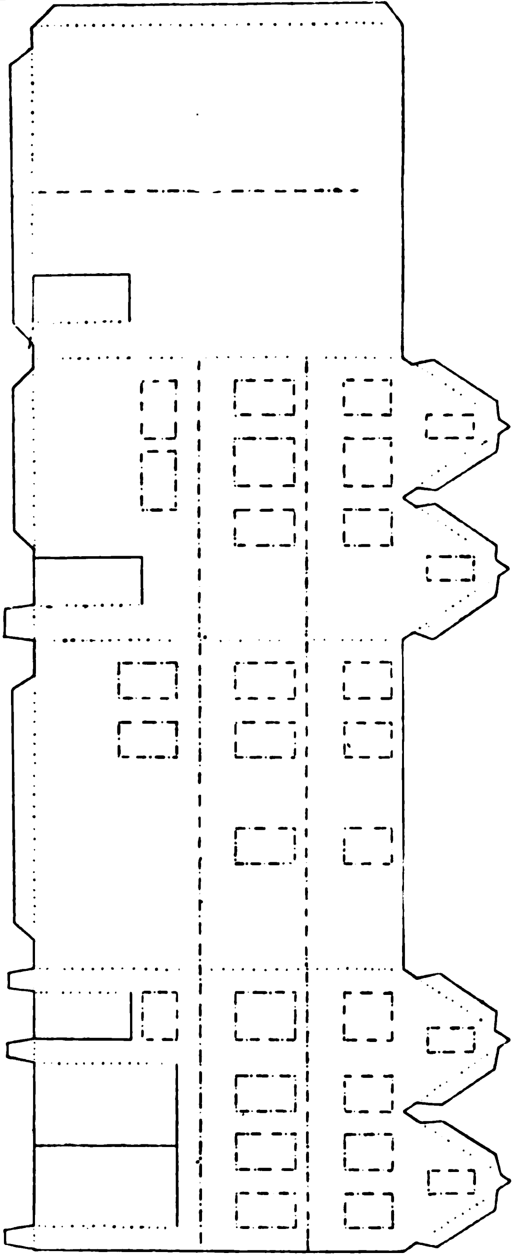
MAKING MODELTOWN FIRE STATION

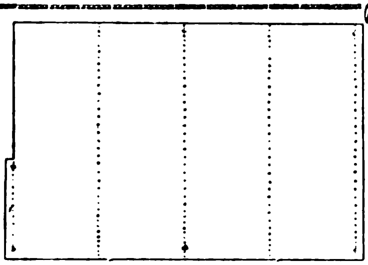
Every large town has a fire station, where fire-engines with their horses and fire-escapes are kept ready to hurry to any building that may be in flames; otherwise, any fire might spread until it did great damage to property and caused loss of life. We shall see how to make a fire station for Modeltown in this part. When finished, our fire station will be as seen in picture 1. The building consists of two parts—first a house, the ground floor of which can accommodate the engines with their horses, and the upper part of which has living apartments for the men; and secondly a high clock tower, the under part of which has room for the fire-escape, and the upper part a few bedrooms that communicate with the house. These two parts are to be made separately, and then later they can be glued together.

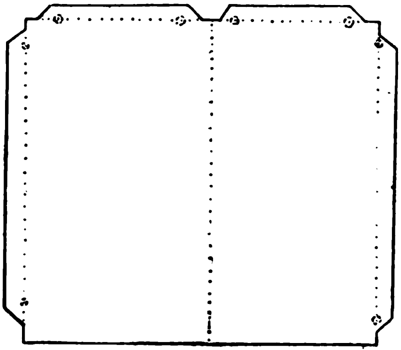
We have seen on page 446 the meaning of the three kinds of lines in the plans, and we now know well that, when there are tiny circles near the ends of a dotted line, that line must be half-cut through, not on the drawing side of the card, but on the opposite side. Bearing these things in mind, we proceed with the plans given in pictures 2, 3, and 4, making them upon our cardboard and then cutting them out and bending them up. Pictures 2 and 4 are half-scale, so that we use scale-rule B in taking our measurements from the plans, and make our drawings on the card with our full-sized rule. Picture 3 is one-third scale, so that in drawing it we use scale-rule C to take our measurements. Pictures 3 and 4 have lines which we must half-cut and bend on the reverse side of the card. Picture 5 shows the card which we make from the plan in picture 2, as it is being bent around. Picture 6 shows how the piece made from picture 4 is glued into position against the inside wall of the piece made from picture 2. This forms the engine-room. Picture 3, which we have already made and cut out, forms the roof, which we glue into place, and then the first part of our fire station will be as seen in picture 7.

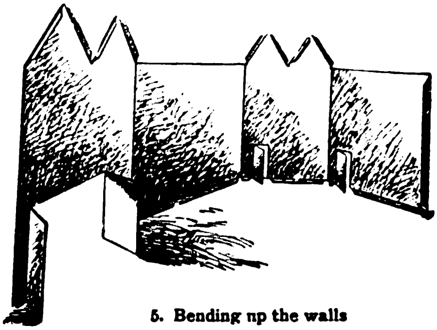

1. Modeltown Fire Station

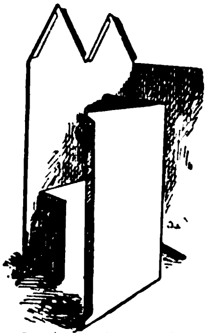
We now make the tower, of which pictures 8, 9, and 10 are the plans, all being half-scale. In the two circles of picture 10 we can draw two clock-faces with hands. We use scale-rule B in taking the sizes from the picture. Make two pieces from picture 8. Pay attention to the reverse side half-cuts and bends in 8 and 10. In picture 12 we see the piece made from picture 9 as it is being bent up. The two pieces made from picture 8

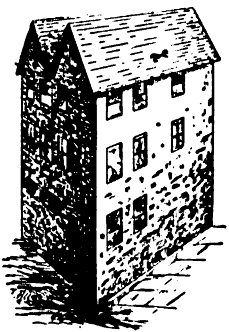

2. Plan of engine-house: half-scale. Use rule B.

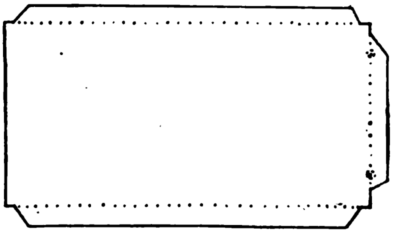

3. Plan of engine-house roof: one-third scale. Use rule C.

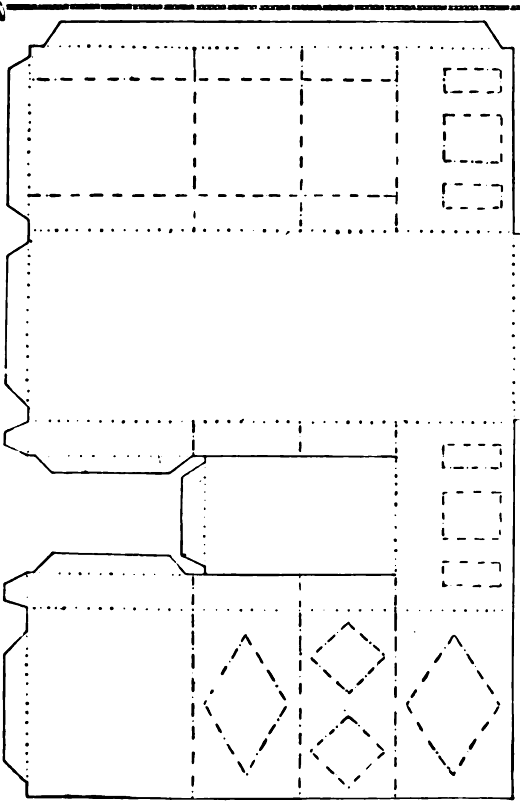

4. Inside wall: half-scale. Use rule B.


5. Bending up the walls

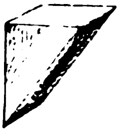

6. Inside wall or partition


7. Engine-house completed

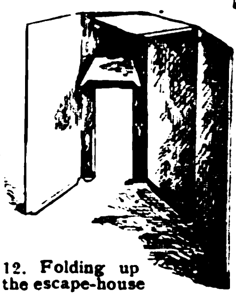

8. Inside wall: half-scale. Use rule B.



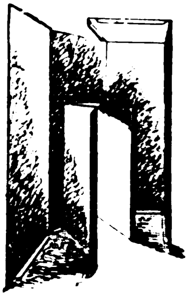
9. Plan of fire-escape house : half-scale. Use rule B.



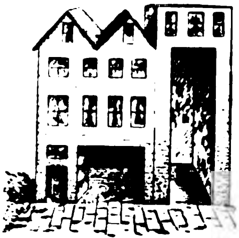
11. Attic passage folded



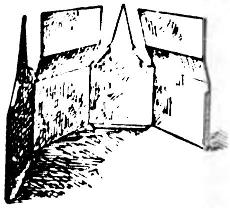
12. Folding up the escape-house



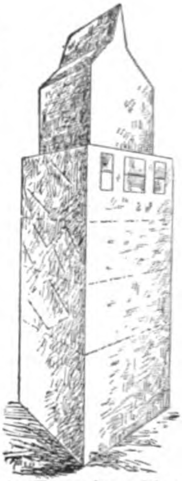
14. Inner walls fixed



13. Position of escape-house

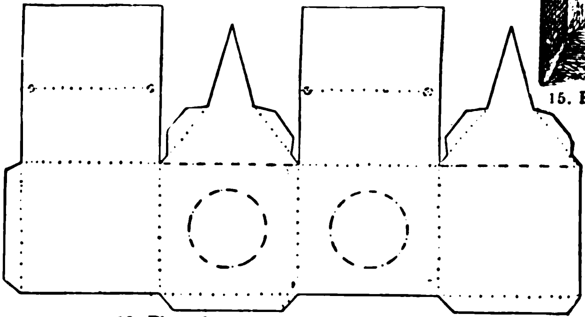


15. Folding up the tower

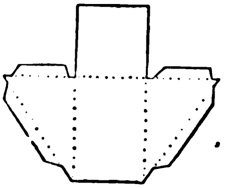


17. Tower in position

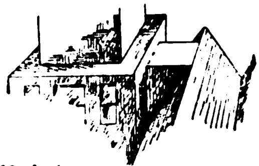
16. Making the moulding



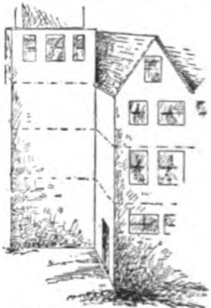
10. Plan of tower : half-scale. Use rule B.



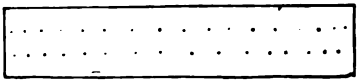
18. Plan of attic passage: half-scale. Use rule B.



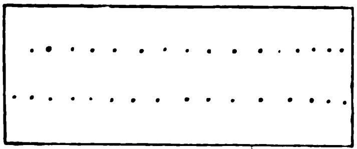
19. Attic passage glued into position



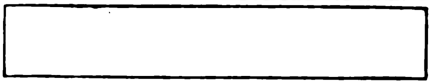
20. Back of building



22. Moulding strip : actual size.



21. Moulding strip : actual size.



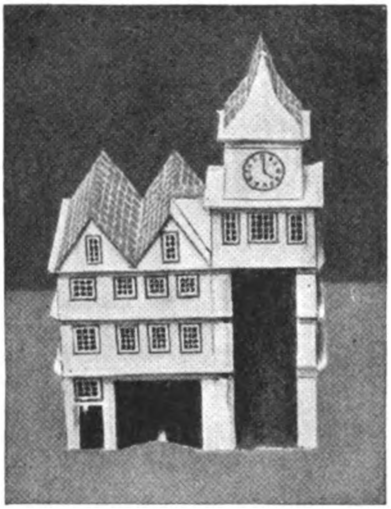
23. Ledge for tower : actual size.

form the inner walls for the fire-escape house and they must be glued into position as seen in picture 14. Observe the flap that forms the roof. Now glue up the four walls of the tower into its square shape, and the back main wall will form the back wall of the fire-escape chamber. Now glue the fire-engine house and the fire-escape tower together as in picture 13.

Now we make the top of the tower, the plan of which was given in picture 10, and which we have already drawn and cut out. When being folded up, this portion will look like picture 15, and when fixed to the under portion of the tower, the structure will be as seen in picture 17. The back of the tower with fire-engine house attached is seen in picture 20.

We have not yet provided any means of access to the bedrooms at top of the fire-escape tower. Make and cut out the plan given in picture 18. It is half-scale, so we use scale-rule B. Now fold and glue it into shape, as seen in picture 11, and glue it into the angle made by the roof of the fire-engine house, as it is resting against the tower. See picture 19.

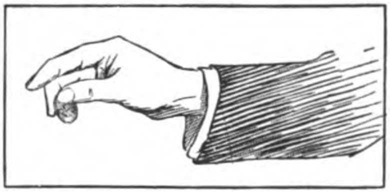
In picture 1 it will be seen that there are flat mouldings or ledges between the floors of the fire-engine house and all round the tower. The lowest moulding is a little wider than the others. Measure the length necessary from the building itself, and make strips, like picture 21, of the necessary length. Picture 21 is actual size. Fold the strips up like picture 16, and glue them into position right round. The next two mouldings and the moulding above the clock are made in the same way, but from picture 22, which is not quite so wide. It also is actual size in the picture. Then the ledge under the clock is cut out in four pieces the same width as picture 23, and of the length necessary to go round the tower. It is glued into place and our building is complete. We can paint the roof red to imitate tiles, make all the doors red, the windows blue, and leave the walls white. A photograph of our fire station is shown.



Photograph of Modeltown Fire Station

THE DISAPPEARING PENNY

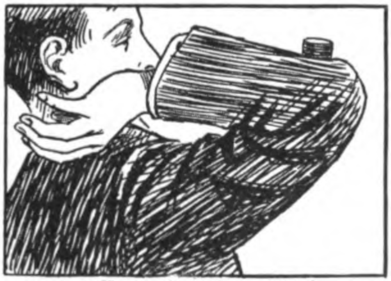
A LITTLE practice enables a boy to mystify others with the trick of the disappearing penny. The conjurer offers someone a penny, and as the other opens his hand to receive it he also opens his hand (apparently), and the penny has fled. This is a mere trick of sleight-of-hand, and one needs practice to be able to do it properly. The conjurer must see that the sleeve of his coat or his cuff hangs with as much space as possible below the wrist, and it is good also if the sleeve or cuff come as far down as possible. Then he takes the penny between his thumb and middle finger, as shown in picture 1, at the same time raising his arm a little above the horizontal, and as his friend opens his hand for the coin he snaps the two fingers, and the coin will disappear up his sleeve. He opens his hand and it is empty. Then as he lowers his arm by his side the penny falls down his sleeve into his hand again. When the young conjurer attempts this trick for the first time he will probably fail, but half-an-hour's practice will give him skill, and eventually, if he is careful, he will be able to do it every time he tries.



1. "Sleeving" a penny

Taken by itself this trick may not seem very much, but it is very effective if introduced among some other tricks. The look of innocent surprise that usually comes upon the face of the poor boy who expected to receive the penny is generally very amusing indeed.

Yet another sleight-of-hand trick with coins is rather clever, and not nearly so difficult to perform as it looks. The boy puts upon his sleeve, as shown in picture 2, a number of pennies or nickels, or some of each, up to as many as six in all, when by simply bringing his arm down quickly while he holds his hand open, with the fingers slightly bent, all the coins go safely into his hand. It seems as if they ought to go scattered in all directions. A very little practice gives proficiency in this trick, but practice should be with a wall in front, so that in case of failure the coins will not go into places where they cannot be easily recovered or do some damage or even hurt a spectator. Of course these are only meant to be tricks.



2. How to "catch the coins"

WHAT PLACE ARE WE IN?

THE GAME OF WHERE IS IT?

HERE is a game to play while we are sitting round the fire on a cold winter's day. One boy reads out the descriptions given below, and the game is to guess the places.

The answers are given in that part of our book beginning on page 2490.

THE CITY OF CROWDED STREETS

1. How hot it is! The sun's rays beat down from a cloudless sky so fiercely that our eyes turn with relief to the broad river speeding by eastwards. Low down on the banks are crowds of people with brown skins, and here and there some wearing white turbans. They are bathing in the water and crowding up and down stone steps, leading to curious little buildings. Can these be little temples? Further along the banks steamers are busy loading indigo and saltpetre to take away to England. All around we hear strange speech, and we look in vain for clean streets. How narrow and crooked they appear!

THE CITY WITH THE GOLDEN DOME

2. It is winter, and we are in a big city where the streets are deeply covered with snow; there is no sound of vehicles, only the tinkling of sleigh-bells and voices to break the silence. The shops have signboards and objects hung outside to tell what they sell, because many of the people cannot read, and certainly we cannot recognise the letters. We follow the way the sleighs take and come to a cathedral with a golden dome and wide granite pillars at the entrance. In front is a river—but a river frozen over. The ice will bear carriages; it will stay there till the spring, and when it melts there will be a religious ceremony and a blessing of the waters.

TREES FOR EUROPE'S SHIPS

3. We are in a country covered with thick forest, so dense that it is only with great difficulty we can make a way through it. Hark! That must be men sawing wood and chopping down trees, and a young Englishman, wearing a white helmet, is directing them, and—why, yes; those big animals working so hard are elephants. They are piling up the big logs with their strong trunks as though they were handling little sticks, and others are dragging along the chained trunks. The Englishman tells us they are clearing a way for a railway through the forest, and the teak-trees they are cutting down are going to countries in Europe, to be used for building ships. He says there are nearly twenty thousand square miles of tropical forest, and that some tigers and leopards have been seen near. Do you know what country we are in?

WHERE STARS COME QUICKLY

4. What a flat mountain! It looks as though a giant plane had been used to cut off the top. The mist lies like a white dining-cloth on it, and dotted about the lower slopes and nestling under them are pretty, low houses surrounded by verandahs and sheltered by trees. Arum lilies are growing wild, for the air is quite warm. Away over the sea the sun is setting, and a large vessel is steaming out of the harbour to make its way northward to England. Perhaps it is carrying diamonds, feathers, wool, or wine.

The town reminds us of a Dutch one, but the cathedral is English, and there are plenty of English names over the shops. Night comes quickly, and the stars soon appear; but we look in vain for the Great Bear.

SIX RIVERS FLOWING INTO A BAY

5. These people must be English, for we understand what they say, and could easily ask where we are; but let us see if we can find out without troubling anyone. Before us lies a fine stretch of water enclosed by land on the west and east and north, and with half a dozen little rivers flowing into it, somewhat like fingers joined on to the palm of a hand. And do you notice that long, long wall in the distance with a lighthouse at one end? Big steamers from Asia and Australia are at anchor in this harbour. "Boom!" goes the midday gun in the fort on little Drake's Island.

It is going to rain, so let us explore the lighthouse close by. The man in charge takes us up it, and tells how it was brought in pieces from a rock fourteen miles out to sea, where a new lighthouse now stands. We face about landwards and look down over the town at the hills, rivers, and blue moorland in the distance.

IN THE TRAIN FOR DAYS

6. We are standing among wheat which grows all around us as far as our eyes can see. The land is very flat, and the air pure and sweet. About a mile away is a large wooden farmhouse. In the distance we see the smoke of an engine. It is coming nearer; now we see the train, and notice it is made up of large saloon carriages, and that the engine has a "cow-catcher" in front. The passengers have been in the train for days, taking their meals and sleeping in it; and before leaving it some will have travelled right over high mountains among snowy peaks, where the brown bear hides away. What is the railway?

WHERE THE COCOA-NUTS GROW

7. We seem to be on an island in the midst of a big sea, for there is water everywhere, except here and there where small islands are scattered about. We are standing on a beautiful white sandy shore, dotted with lovely coloured shells. It is only one o'clock in the day, yet, when we look at our little pocket compass and then at the sun in the sky, we find the sun is to the north of us.

Away inland the ground rises in terraces, forming a kind of amphitheatre, up to the highest point in the middle of the island, which looks about 8,000 feet above the sea, and reminds us of a broken-down volcano. We turn up one of the gorges, and see palm-trees with cocoa-nuts growing on them, great tree-ferns, sugar-canes, and oranges. We meet some contented-looking, brown-skinned natives, who tell us in broken French that they are going to dive for oysters to get mother-of-pearl from the shells that they find.

THE NEXT THINGS TO MAKE AND THINGS TO DO ARE ON PAGE 2485

A BOXFUL OF SUNLIGHT

CONTINUED FROM 2112

Two boys, with their heads close together, were standing in a dark corner of an alley in Cardiff, examining with much delight a box of matches which they had picked up in the gutter, when someone looked over their shoulders and said, in a threatening voice:

"Now, then, I've caught you!"

The boys started with fear; but they soon recovered themselves, for the stranger laughed heartily at their fright. He was a handsome, sunburned man with gold rings in his ears, who carried a grey parrot in a cage, and looked just the kind of man who understands boys and loves a lark.

"It's only a box of matches," said one of the boys, squaring up to him.

"*Only* a box of matches!" said the sailor. "Why, nipper, that thing in your hand is a miracle. See here!" He set down his bird-cage and struck a match. "Look at it!" he cried. "Ain't it beautiful?" He guarded the flame in his large hands, and showed it to the boys. "It's fire! Do you know that? Fire! Ah, that's a miracle, that is! Fire's a miracle, and no mistake about it." He lighted his pipe, then blew out the match and threw the stick away. "That flame which I've blown into nothingness," he said, puffing at his pipe, "lived at one time of its life—but before you and I were born, mind—about a hundred million miles from Cardiff. It lived in the sun. It was in the sun, and a part of the sun. And then one day it started out for a stroll, and it got as far as the earth. It got here before there was a living thing to be seen—man, monkey, or fly. And it stayed here, and enjoyed India, and the Mediterranean, and Brighton.

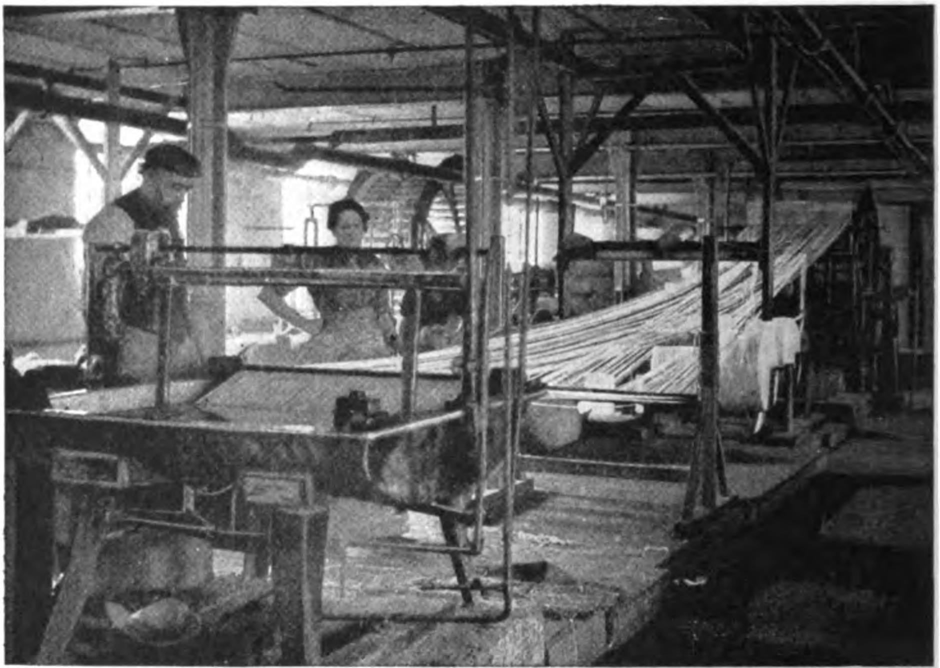
"Then it got into the earth, and then it got into the bones of an animal; and then it was ground out of those bones—turned into something called phosphorus; and then it got into the box of matches; and by striking it I turned it back into what it was when it lived in the raging, burning sun; and now I've blown it out. Blown out the sun! I call matches sun-sticks. For every match on this earth is tipped with a bit of the genuine real sun. The sun lighted my pipe for me. Ain't that a wonder to think of? But people don't think. Nobody thinks, except sailors and parrots. Here, take your matches—only matches! One cent a box—common matches! Yes; but suck five or six of these heads, and you'd be dead—killed by the sun!"

"That's so," said the parrot gravely. "It's a miracle, a miracle, a miracle!"

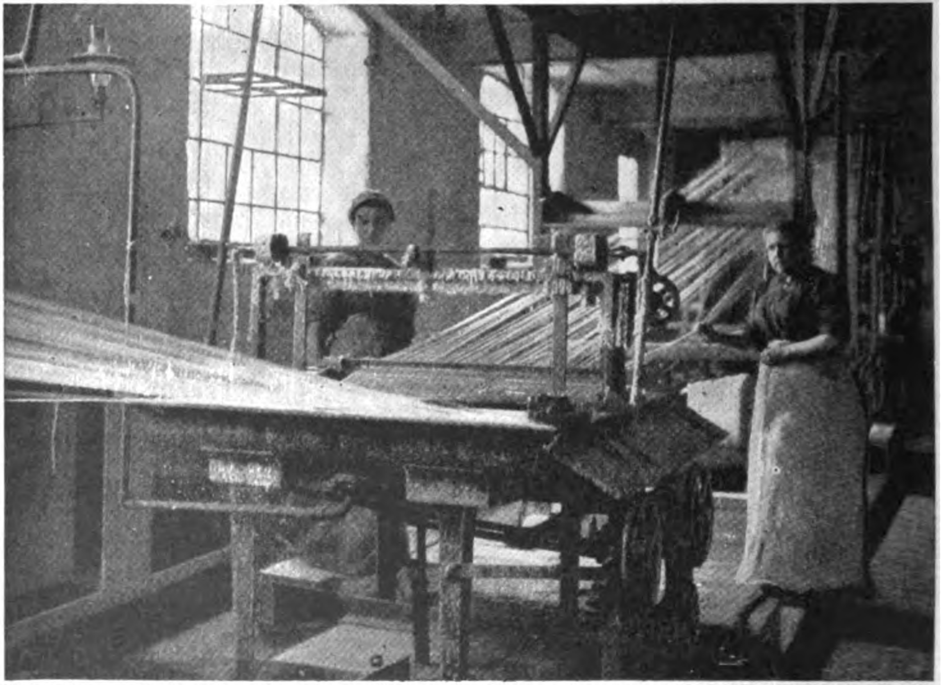
The boys burst out laughing.

"Thanks for the light," said the sailor, walking away smoking his pipe.

MAKING A BOX OF MATCHES

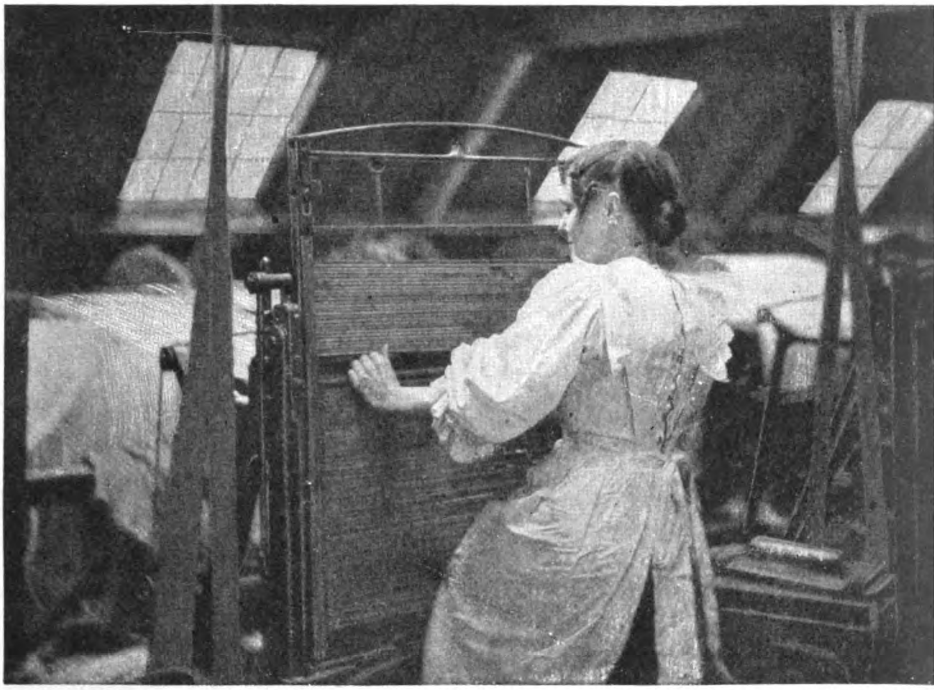


When Queen Victoria came to the throne fire had generally to be struck from flint and steel. Matches cost a cent apiece. Now they can be bought at a hundred for a cent. The first stage in the making of the wax match is to prepare the cotton. This comes to the machine on reels, each containing over 4,000 miles of cotton. The machine works the cotton into strands of twenty or thirty threads, and cleans it all ready to receive the wax.

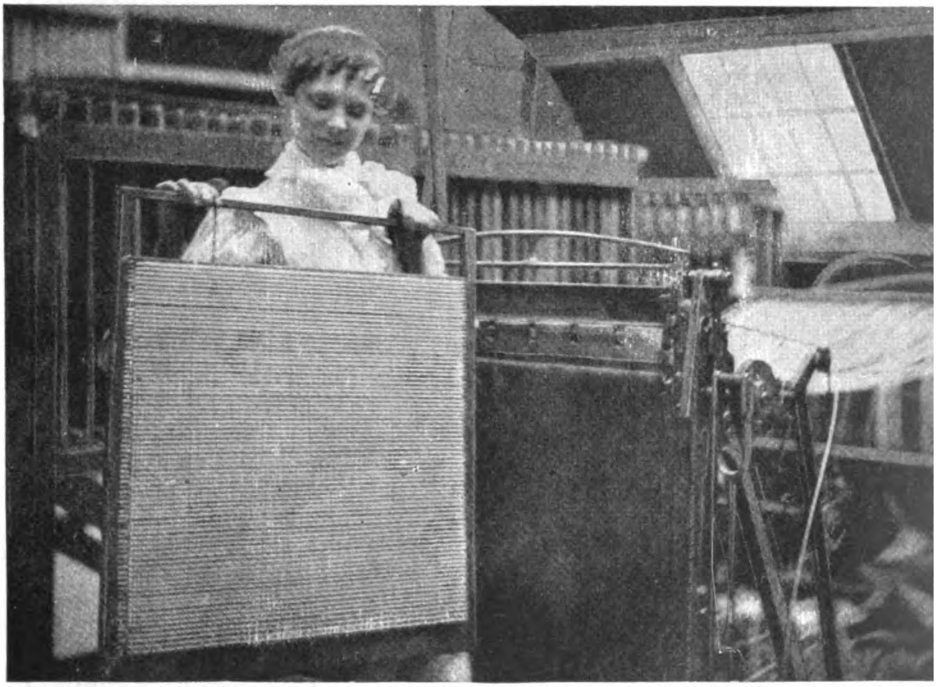


When the strands have been formed from the threads of cotton, they are run by machinery through a trough which contains melted wax. The wax coats the cotton, which is then passed through holes in iron plates. These holes make the waxed strands round and smooth and of proper thickness for the size which the matches are to be.

A MACHINE THAT HOLDS 8,000 MATCHES

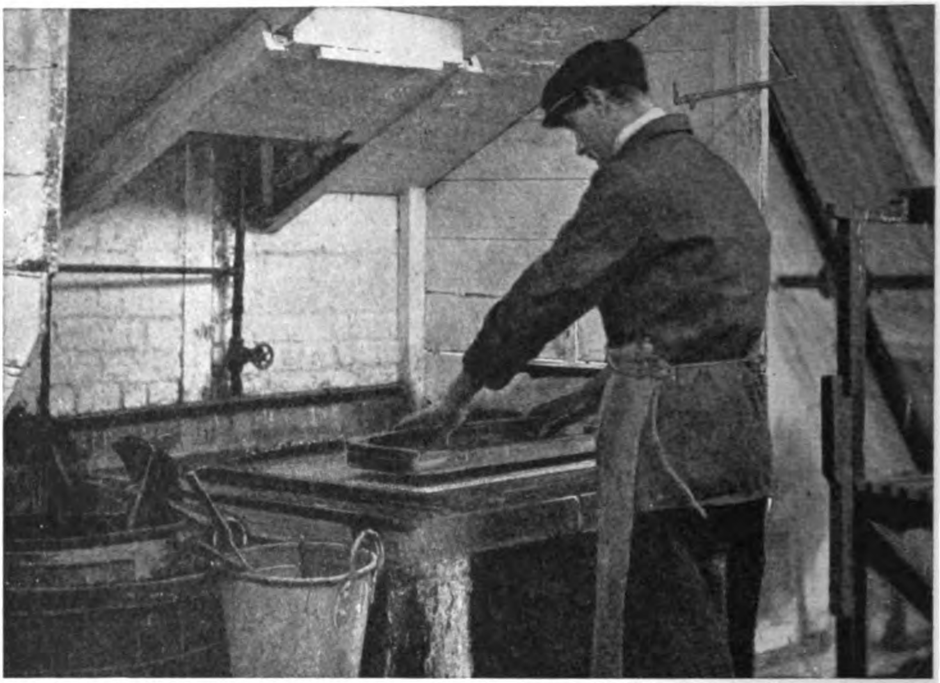


By this time the waxed strands of cotton have become very long tapers, and are wound round great drums. Fron these the tapers pass through another machine, which cuts them into match-lengths and places them in a frame

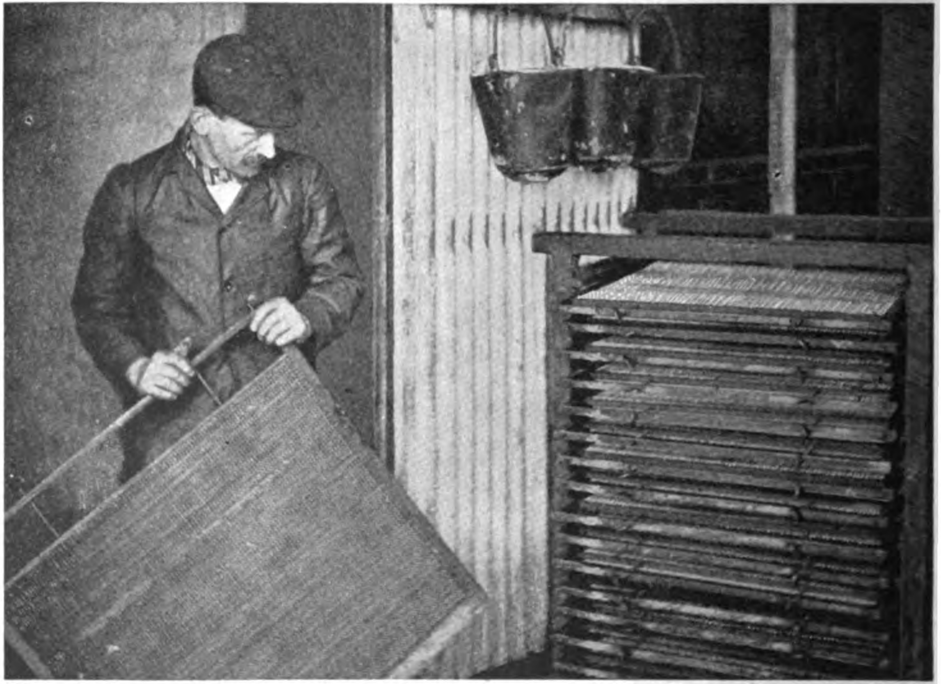


The machine, cleverly controlled by a girl, soon has the match-lengths all beautifully fitted into position. Th girl then removes the frame from the machine. It now has in it 8,000 tiny pieces of wax taper, all ready to b made into matches. Although these points look like a solid mass, each is quite separate from the other and ready to receive the phosphorus, which is the next process in the manufacture of a wax match

GIVING THE MATCHES THEIR STRIKING TIPS



A trolley carries the frame to the dipping-room. Here phosphorus and other things are lying ready on a hot metal slab. The frame is placed flat upon this and pressed down, so that the end of each of the 8,000 matches is forced into the phosphorus and takes up some of the mixture. This tip, when rubbed upon the box, catches fire.

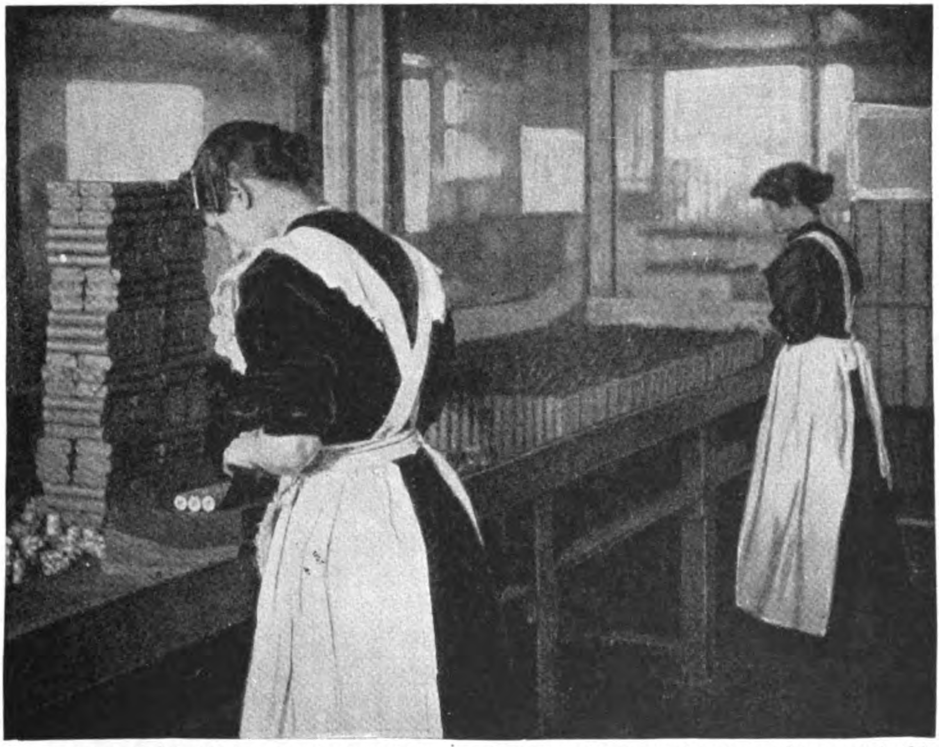


All the matches are by this time tipped with the little phosphorus caps, which, when rubbed, cause them to light. The next thing to do is to dry them. The frames are placed in racks in the drying-room, where a current of air is constantly blowing to prevent the matches from catching fire from too great a heat.

MATCH-BOXES FOR OVER THE SEAS

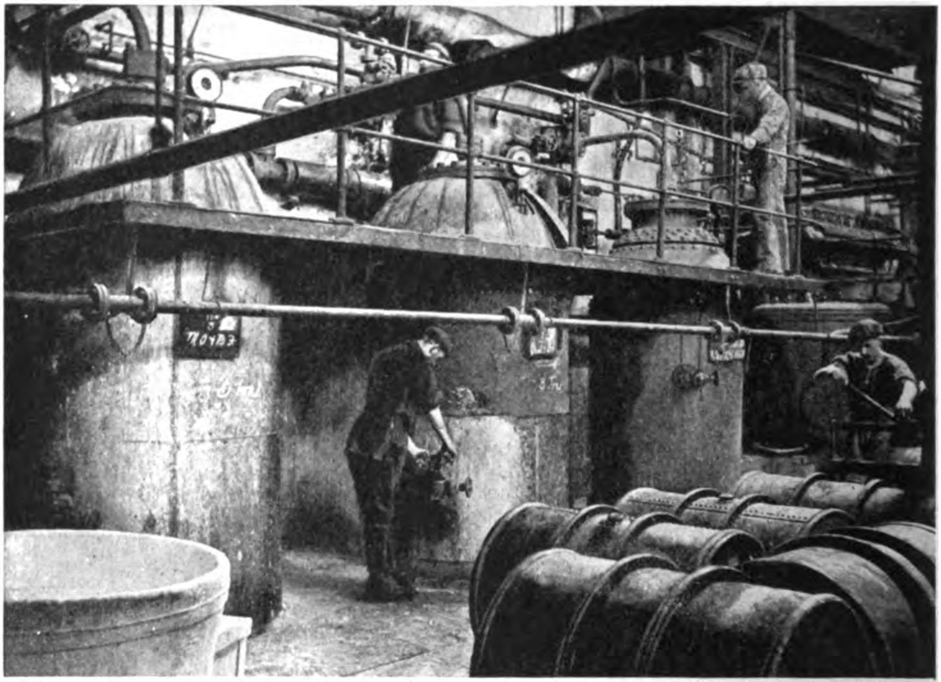
With care and skill the matches soon dry and harden, and are then ready to be packed in boxes. They are taken to girls who have ready the boxes in which they are to be placed for convenient use in our homes.

The girls who pack the matches are so nimble and so accustomed to this work by long and continued practice that with one sweep of the hand they are able to collect just the right number of matches to fill a box.

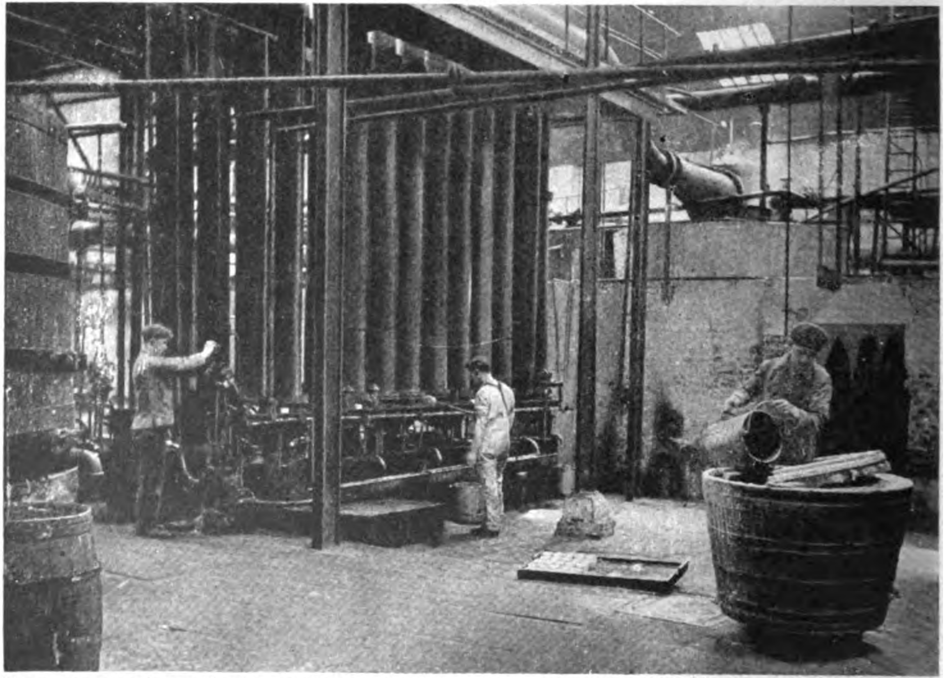


The matches go into the boxes and the boxes are made up into these round packets, seldom seen in this country. They go to Australia and other British colonies, where these rolls of wax matches are liked much better than square boxes, as they take less room when carried in the pocket.

HOW A CANDLE IS MADE



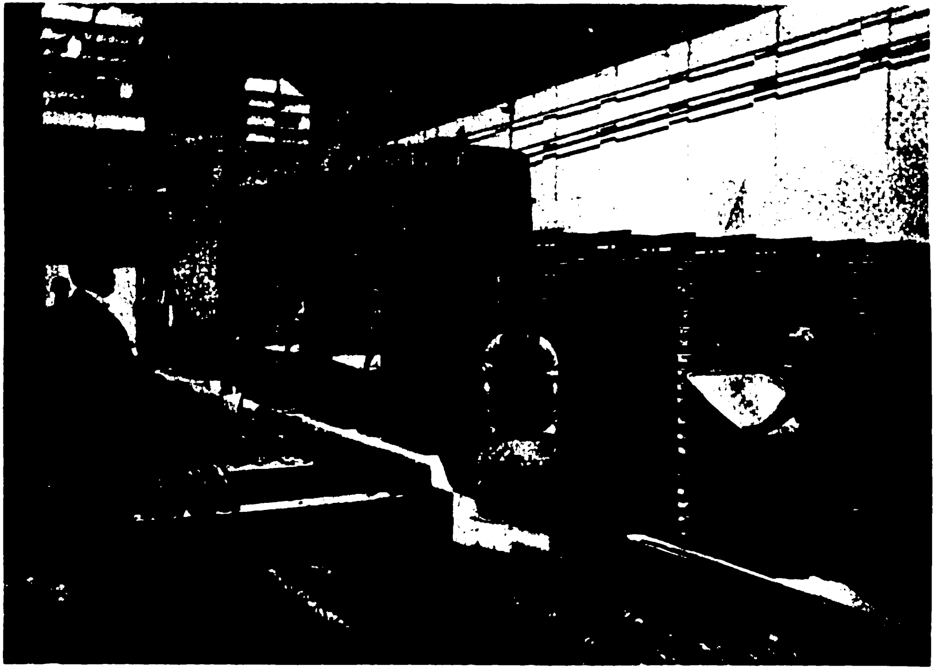
Candles are cheap and easy to light, but they are as hard to make as gas. Here we see the beginning of the candles. The big upright vessels are called autoclaves. They hold the oils, and tallows, and fats, which have first to be purified. Glycerine has to be extracted, by the aid of lime and water and pressure, from these fats. This is an important process, for if any glycerine remained the candle would not give a light.



From the autoclaves the fatty acids are placed in other huge tanks. Now the lime and other impurities have to be removed by sulphuric acid. The fatty acids are next purified and distilled, and, after many careful refining processes in the tanks, the purified matter drips down the long tubes shown here.

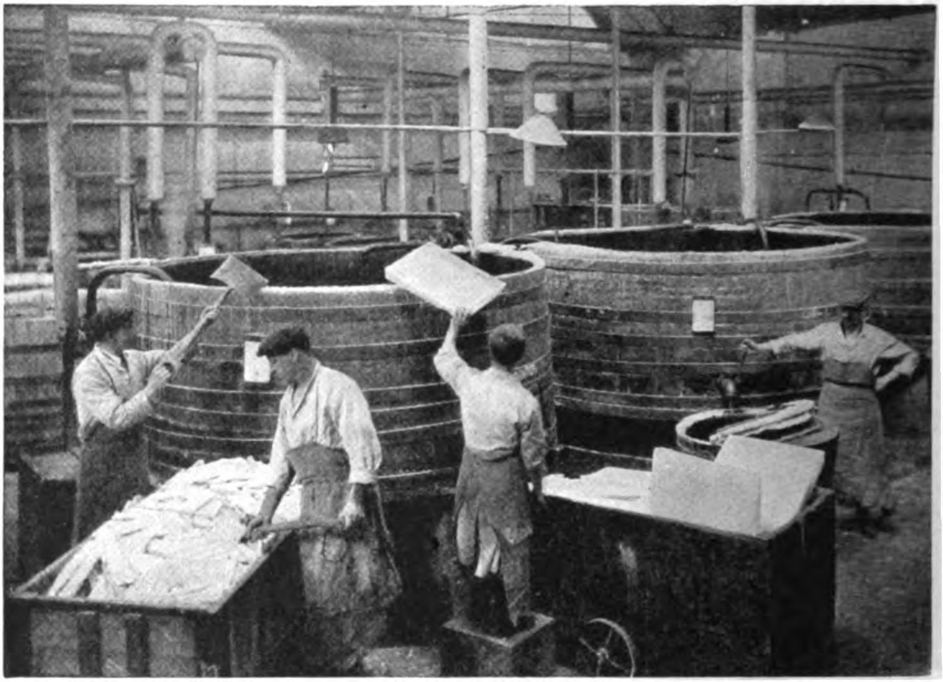
THE THINGS THE CANDLE IS MADE OF

The two chief things in a good candle are stearine and paraffin. Here we see the stearine, which can be got only from certain fats. The materials, after cooling in tins, are placed in bags. The bags are put into hydraulic presses and squeezed until the stearine becomes solid white cakes, and is shaken into barrels, ready for use. It looks like pure white wax, and has neither taste nor smell. It is the solids, squeezed from the fats.



The first step towards getting pure paraffin is to refine impure wax. To get rid of the parts that are not wanted, the wax is made into thin cakes, then placed on sloping shelves in ovens. The soft paraffin and the oi melt and run away, leaving the hard paraffin behind. This is put into shallow pans to cool, and then, like the stearine, it is quite ready. The paraffin comes from certain kinds of coal, from coal-tar, peat, and other things.

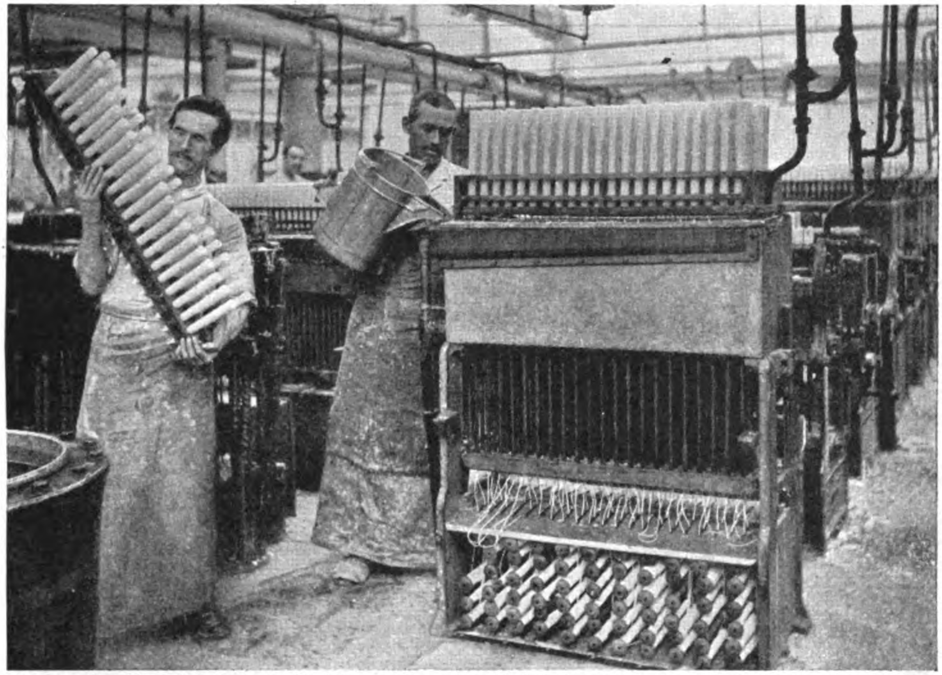
THE FATS MEET IN THE MELTING-POT



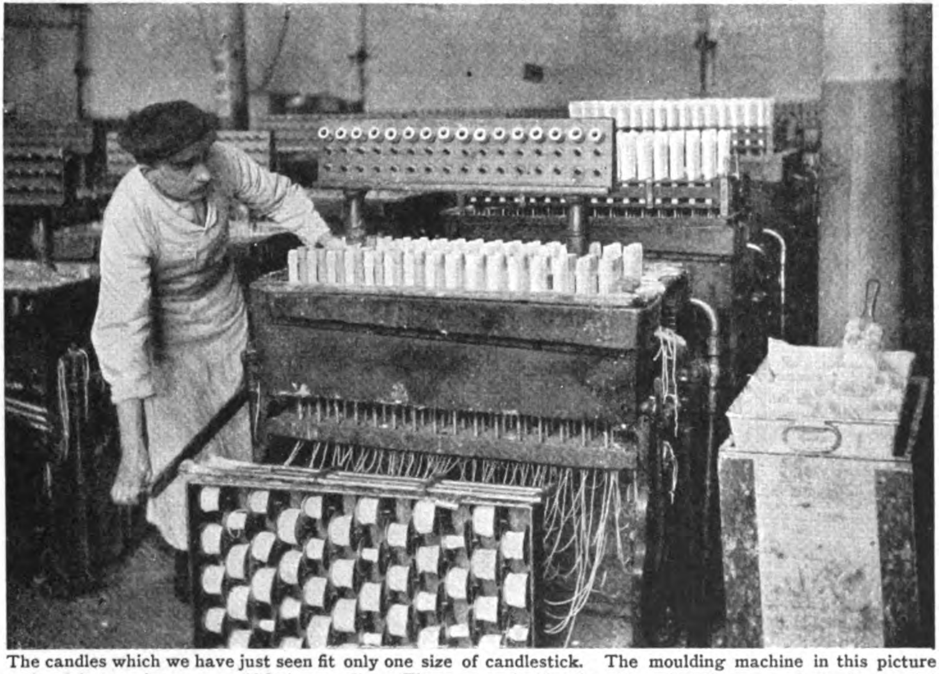
Soon the stearine and paraffin meet in the melting-pot. Men are shovelling in stearine, while another man drops in cakes of paraffin. We see the steam-pipes running into the vats. These make the solid stearine and paraffin melt and mix together in one fluid. This forms wax for candles and is ready for the moulder, who shapes it.

The old-fashioned tallow candles, or dips, are being made here. The cotton wick is dipped in the hot fat again and again until it is coated to the proper thickness. One long wick makes two candles, and these are hung over racks to harden, ready for packing. These candles were used in all houses before the use of paraffin and gas was discovered, and it was for these that the old snuffers were used to trim the burning wicks.

THE MACHINES THAT SHAPE THE CANDLES

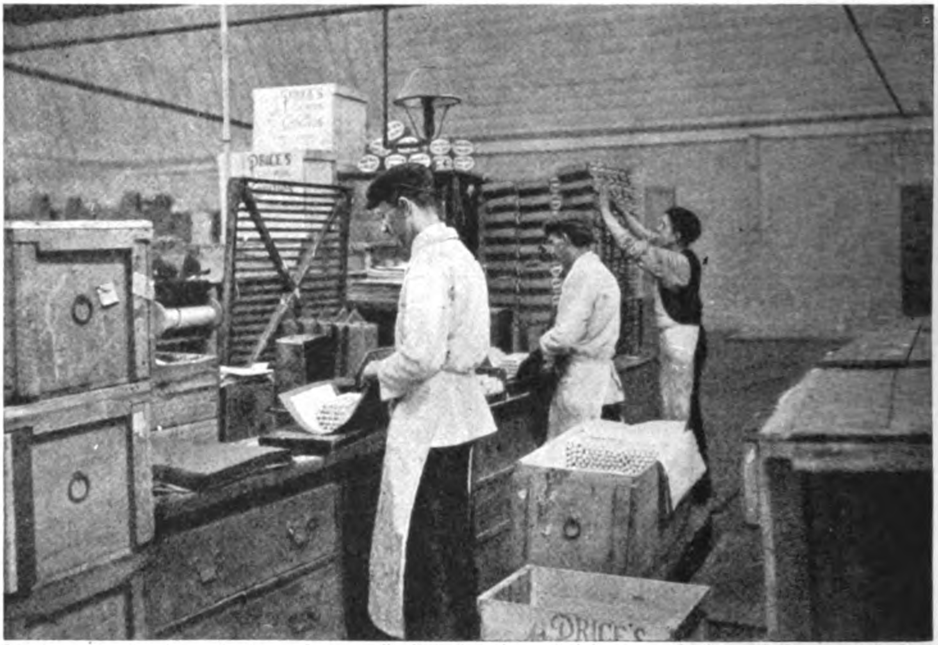


The actual making of the wax candle follows. Upon every bobbin is a supply of wick, from which each mould is fed. When all is ready hot wax is poured into a trough, whence it flows into all the moulds, to settle round the wicks. Cold water is then turned on to cool the wax. The workman pulls a lever, and the candles are forced from the moulds. They come out shaped, and are fixed by the machine in a frame, and another lot can be made. On the left of the picture is a man carrying away a frame of candles which have just been finished.

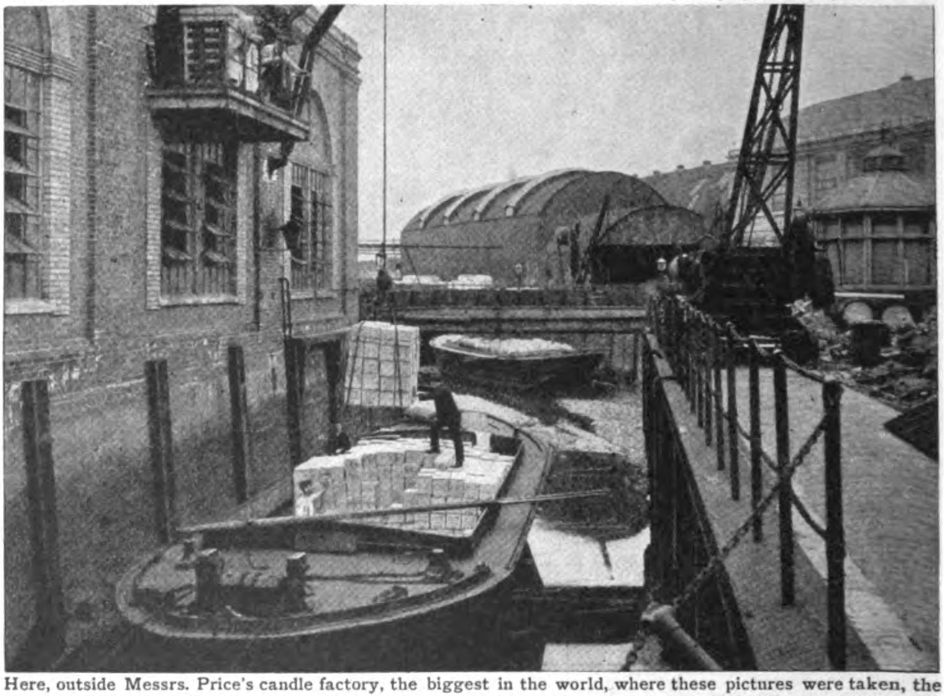


The candles which we have just seen fit only one size of candlestick. The moulding machine in this picture makes what are known as self-fitting candles. They are made like the others, but they pass through a special mould which forms tapering grooves at the ends of the candles, so that they may fit into any sort of holder.

THE CANDLES GO OUT TO LIGHT THE WORLD

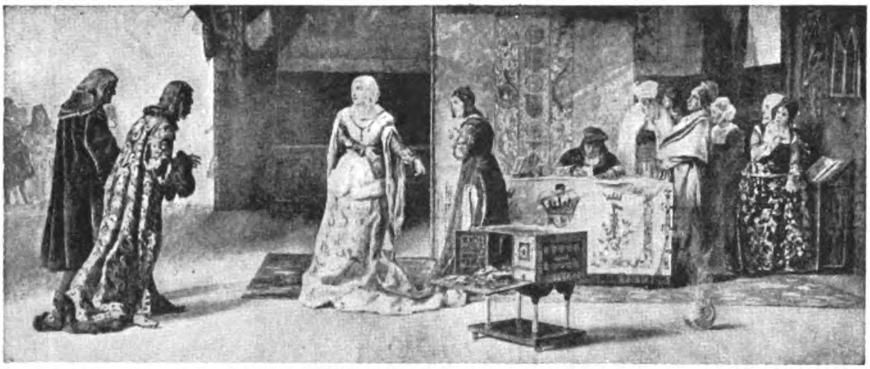


Much preparation is required to make a candle, but when the materials are ready the work does not take long to carry through from beginning to end. Here the candles are being made up into packages, then put into boxes, ready to be taken away by cart, and train, and steamer, to be used at once, or perhaps years and years hence.



Here, outside Messrs. Price's candle factory, the biggest in the world, where these pictures were taken, the cases of candles are being lowered into barges to go out into the Thames, whence ships will carry them to all parts of the world. Over two thousand people are employed at these works, where two thousand different sorts **of candles are made. The factory sends out between seventy and eighty tons of candles every working day, to light the poor man's cottage, the piano of the nobleman, the fairy lamps and lanterns of Eastern princes.**

THE NEXT PICTURES OF FAMILIAR THINGS BEGIN ON PAGE 2509



THE FRIEND OF COLUMBUS

CONTINUED FROM 2318

QUEEN ISABELLA OF CASTILE was not only one of the ablest of queens, but one of the most generous of women.

Peter Martyr, a man who lived in her palace and knew her well, wrote to the Archbishop of Granada on the day of her death: "My hand falls powerless by my side from very sorrow. The world has lost its noblest ornament. She was the mirror of every virtue, the shield of the innocent, and an avenging sword to the wicked."

Isabella was Queen of Castile in her own right, and by her marriage with Ferdinand, King of Aragon, the two kingdoms were united, and have ever since remained parts of Spain.

For one thing the whole world will ever be grateful to Isabella of Castile. In pity for the sufferings of the wounded, she paid surgeons to go with the army and care for the soldiers hurt on the field of battle. Six roomy tents, called "The Queen's Hospital," were supplied with beds and all appliances that the rough surgery of those days had in use. Thus it is to the kind heart of this good woman that we owe the first camp hospital for use in war.

Many stories are told of the queen's generosity, piety, humility, and wise plans for the good of the people over whom she ruled. She once saw a bull-fight, and though she could not make the people give up the brutal national amusement, she refused to be present at another unless the sharp horns of the bulls were guarded to prevent injury to the beasts.

Perhaps Queen Isabella's name is best known to American boys and girls as the friend and helper of Columbus. She and her husband believed at first that Columbus was merely a needy adventurer and sent him away. The statesman Santangel, however, came to his help, and then the queen was won over. She no longer hesitated, but entered warmly into the question of ways and means, declaring she would undertake the matter for her own country of Castile, and that she would even pawn her jewels to pay the expenses of the expedition. Santangel was much pleased at the queen's offer, but said it was not necessary for her to pawn her jewels.

Columbus was at once brought back into the royal presence. On April 17, 1492, Ferdinand and Isabella made an agreement with him to undertake the voyage westward.

The story of the wonderful venture and what Columbus found is told elsewhere. It was like the good queen to refuse to allow the people in America to be brought to Spain as slaves, and she made some captains who brought over cargoes of them take them back to their own homes.

THE GIRL WHO SAW THE TSAR

ABOUT a hundred years ago a Russian officer offended the Tsar, and was banished with a number of other exiles to a cold and dreary place in the north of Siberia. The prisoners went through all manner of hardships, but this Russian officer was allowed to take with him his wife and little daughter, Prascovia; so that he was saved the agony of separation from them.

Life to the exile in Siberia was a rough and hard one, and as the years went by, and any hope of pardon grew less and less, it was sad for the parents to watch their little daughter growing a big, untaught girl in such rough surroundings. Seeing her father so unhappy, Prascovia was unhappy, too; and then one day, when she was nearly fifteen years old, the idea flashed into her mind that she ought to go to St. Petersburg and beg the Tsar to pardon her father.

Could she do it? To walk all those dreary hundreds and hundreds of miles to Russia! Would her father and mother consent to let her try? Anxiously, with beating heart, she told her father what it was in her mind to do. But he only smiled at the idea of his young daughter venturing on such a mad errand.

THE LONG JOURNEY WHICH BEGAN AFTER A LONG, LONG WAITING

Three years went by, and little Prascovia was growing helpful and womanly. She had never forgotten her cherished plan, and she put it before her father again. This time her father and mother listened to her, but begged her not to think of leaving them for such a dangerous venture. But Prascovia got another exile to write a request for a passport, and in six months that passport reached her.

Now that the way was open, Prascovia's father tried to dissuade her from starting. How could she, a penniless, unknown girl, get access to the Tsar, even if she braved the dangers of the journey? But Prascovia put her trust in God, knelt to receive her parents' blessing, kissed them, and, with just one rouble in her pocket, started on her long walk through the forest. Her parents went with her a little way to the town near, where she had friends who gave her a bed the first night; but next day her lonely tramp began. On and on, through the miles of forests, over rough roads and across rivers, Prascovia plodded, sometimes losing her way, sometimes getting soaked with rain, often weak with hunger and spent with exhaustion. At times she met with kindness, was made welcome at a cottage, or got a lift in a cart; at other times she was roughly ordered away or hooted by village boys.

THE SORROWS OF THE LONG WALK TO ST. PETERSBURG

In one cottage where she spent a night the people seemed so unfriendly and suspicious that Prascovia was afraid they meant her ill, especially when, thinking her asleep, they searched her clothing. But they were merely curious.

As winter came on and snow fell, Prascovia's misery increased, and she was often hindered by the snow-drifts. When in a barge on the Volga, she was pushed into the water by accident, and as a result fell ill; but some good nuns nursed her till she was well again.

At last Prascovia, much to her joy, reached St. Petersburg. A kind lady interested herself in the girl, and took care of her, until an opportunity came to present her petition to the mother of the Tsar. This lady was touched with the story Prascovia told her, and promised to take her to the Tsar.

Now the way was clear, and two days later Prascovia was in the presence of the Tsar. To her relief, he received her kindly, promised inquiry into her father's trial, and gave her five thousand roubles. The grateful girl poured forth her thanks and blessings on the Tsar.

THE PARDON FOR WHICH A BRAVE GIRL PAID WITH HER HEALTH

And so Prascovia got the pardon for her father, and when the Tsar asked if there was anything she wanted for herself, she begged for a like act of mercy for two friends of her father who were also in exile.

Prascovia soon set out to meet her parents on their way home from Siberia, and joyful indeed was the meeting; but the poor girl never really recovered from the hardships of her long journey, and she was an invalid during the rest of her life.

THE NEXT GOLDEN DEEDS BEGIN ON PAGE 2477

THE PRINCE WHO WAS POOR

CONTINUED FROM 2306

There was once a poor Prince who had a kingdom. His kingdom was very small, but still quite large enough to marry upon; and he wished to marry.

It was certainly rather cool of him to say to the Emperor's daughter: "Will you have me?" But so he did; for his name was renowned far and wide.

It happened that where the Prince's father lay buried there grew a rose-tree—a most beautiful rose-tree, which blossomed only once in every five years, and even then bore only one flower, but that *was* a rose! It smelt so sweet that all cares and sorrows were forgotten by him who inhaled the fragrance.

The Prince also had a nightingale, who could sing in such a manner that it seemed as though all sweet melodies dwelt in its little throat. So the Princess was to have the rose and the nightingale; and they were accordingly put into large silver caskets, and sent to her.

The Emperor had them brought into a large hall, where the Princess was playing with the ladies of the court; and when she saw the caskets she clapped her hands for joy.

"Ah, if there were but a little pussy-cat in one of the caskets!" exclaimed she; but just then the rose-tree, with its beautiful rose, came to view.

The young Princess touched it, and was almost ready to cry from disappointment.

"Oh, father!"

"Let us see what is in the other casket," proposed the Emperor. So the nightingale came forth, and sang so delightfully that at first no one could say anything ill-humoured of it. Everyone but the Princess was charmed.

"I hope that it is not a real bird," said the Princess.

"Yes, it is a real bird," said those who had brought it. "Well, then, let the bird fly," returned the Princess; and she positively refused to see the Prince.

However, he was not to be discouraged; he daubed his face with brown and black, pulled his cap over his ears, and knocked at the door.

"Good-day to my lord the Emperor," said he. "Can I have employment at the palace?"

"Why, yes," said the Emperor; "I want someone to take care of the pigs, for we have a great many of them."

So the Prince was appointed "Imperial Swineherd." He had a dirty little room close by the pigsty, and there he sat the whole day and worked. By the evening he had made a pretty little saucepan. Little bells were hung all round it; and when the pot was boiling these bells tinkled merrily, and played an old melody.

But, what was still more curious, whoever held his finger in the steam from this saucepan immediately smelt all the dishes that were cooking on every hearth in the city.

Now, the Princess happened to walk that way, and when she heard the tune she stood quite still, and seemed pleased, for she could play this old tune—it was the only piece she knew.

"Why, there is my piece," said the Princess; "that swineherd must certainly have been well educated. Ask him the price of the instrument."

So one of the court ladies ran in.

"What will you take for the saucepan?" inquired the lady.

"I will have ten kisses from the Princess," said the swineherd.

"Indeed!" said the lady.

"Well, what does he say?" asked the Princess.

"I cannot tell you," replied the lady; "it is too bad!"

"Then you can whisper it!" So the lady whispered it.

"He is an impudent fellow!" said the Princess, and she walked on. But when she had gone a little way the bells tinkled so prettily that she stopped.

"Ask him if he will have ten kisses from my companions," said she.

"No, thank you!" answered the swineherd; "ten kisses from the Princess, or I keep the saucepan myself."

"That must not be, either," said the Princess; "but do you all stand before me, that no one may see us."

The court ladies placed themselves in front of her, and spread out their dresses, and the swineherd got ten kisses, and the Princess the saucepan.

That was delightful. The saucepan was kept boiling all the evening, and the whole of the following day. They knew perfectly well what was cooking at every fire throughout the city, from the chamberlain's to the cobbler's. The court ladies danced and clapped their hands.

"We know who has soup and who has pancakes for dinner to-day, who has cutlets and who has eggs. How interesting!" said the court ladies.

The swineherd—that is to say, the Prince, although no one knew that he was other than an ill-favoured swineherd—let not a day pass without working at something; he at last constructed a rattle which, when it was swung round, played all the waltzes and jig-tunes which have ever been heard.

"Ah, that is wonderful!" said the Princess, when she passed by. "Ask him the price of the instrument."

"A hundred kisses from the Princess," said the young lady who had been to ask.

"I think he is not in his right senses," replied the Princess, and walked on; but when she had gone a little way she stopped again. "We must encourage art," said she. "Tell him he shall have ten kisses from me, and the rest from you."

"Oh, but we should not like that at all!" said they.

"What are you muttering?" asked the Princess. "If I can kiss him, surely you can!"

So the young ladies were obliged to go to him again.

"A hundred kisses from the Princess!" said he.

"Stand round!" said she; and all the ladies stood round while the swineherd kissed the Princess.

"What can be the reason for such a crowd close by the pigsty?" said the Emperor, who happened just then to step out on the balcony. "I must go down to see what they are about!"

As soon as he had got into the courtyard he moved very softly, and the ladies were so much engrossed with counting the kisses that they did not see the Emperor.

"What is all this?" said he, when he saw what was going on; and he boxed the Princess's ears with his slipper, just as the swineherd was taking the eighty-sixth kiss.

"March out!" cried the Emperor, for he was very angry; and both Princess and swineherd were thrust out of the city.

"Alas!" said the Princess. "If I had but married the handsome young Prince! Ah, how unfortunate I am!"

Then the swineherd went behind a tree, washed the black and brown colour from his face, threw off his dirty clothes, and stepped forth in his princely robes; he looked so noble that the Princess could not help bowing before him.

"You are rightly served!" said he. "You would not have an honourable Prince; you could not prize the rose and the nightingale; but you were ready to kiss the swineherd for the sake of a trumpery plaything!"

And the poor Prince, turning away, went back to his kingdom alone.

THE EMPEROR CAME UP TO THE PIGSTY

As soon as the Emperor had got into the courtyard he moved very softly, and the ladies were so much engrossed with counting the kisses that they did not see him. "What is all this?" said he, when he saw what was going on.

THE MERRY COBBLER AND HIS COAT

A TALE FROM GRANNY'S WONDERFUL CHAIR

Spare, the merry cobbler, of whom we read on page 2297, where this tale begins, was treated like a prince at the King's court; and the news of his good fortune reached his brother Scrub in the moorland cottage one first of April, when the cuckoo came again with two golden leaves.

"Think of that!" said Fairfeather. "Here we are spending our lives in this humdrum place, and Spare making his fortune at court with two or three paltry green leaves! What would they say to our golden ones? Let us make our way to the King's palace."

Scrub thought this excellent reasoning. So, putting on their holiday clothes, Fairfeather took her looking-glass and Scrub his drinking-horn, which happened to have a very thin rim of silver, and, each carrying a golden leaf carefully wrapped up that none might see it till they reached the palace, the pair set out in great expectation.

"How far Scrub and Fairfeather journeyed I cannot say, but when the sun was high and warm at noon they came into a wood feeling both tired and hungry.

"Let us rest ourselves under this tree," said Fairfeather, "and look at our golden leaves to see if they are quite safe."

In looking at the leaves, and talking of their fine prospects, Scrub and Fairfeather did not perceive that a very thin old woman had slipped from behind the tree, with a long staff in her hand and a great wallet by her side.

"Noble lord and lady," she said, "will ye condescend to tell me where I may find some water to mix a bottle of mead which I carry in my wallet, because it is too strong for me?"

As the old woman spoke, she pulled out a large wooden bottle such as shepherds used in the ancient times, corked with leaves rolled together, and having a small wooden cup hanging from its handle.

"Perhaps ye will do me the favour to taste," she said. "It is only made of the best honey. I have also cream cheese and a wheaten loaf here, if such honourable persons as you would not think it beneath you to eat the like."

Scrub and Fairfeather became very condescending after this speech. They were now sure that there must be some appearance of nobility about them; besides, they were very hungry, and, having hastily wrapped up the golden leaves, they assured the old woman they were not at all proud, notwithstanding the lands and castles they had left behind them in the North Country, and would willingly help to lighten the wallet.

The old woman was a wood-witch; her name was Buttertongue; and all her time was spent in making mead, which, being boiled with curious herbs and spells, had the power of making all who drank it fall asleep and dream with their eyes open. She had two dwarfs of sons; one was named Spy, and the other Pounce. Wherever their mother went, they were not far behind; and whoever tasted her mead was sure to be robbed by the dwarfs.

Scrub and Fairfeather sat leaning against the old tree. The cobbler had a lump of cheese in his hand; his wife held fast a hunch of bread. Their eyes and mouths were both open, but they were dreaming of great grandeur at court, when the old woman raised her shrill voice:

"What ho, my sons! Come here, and carry home the harvest!"

No sooner had she spoken than the two little dwarfs darted out of the neighbouring thicket.

"Idle boys!" cried the mother. "What have ye done to-day to help our living?"

"I have been to the city," said Spy, "and could see nothing. These are hard times for us—everybody minds his business so contentedly since that cobbler came. But here is a leathern doublet which his page threw out of the window; it's of no use, but I brought it to let you see I was not idle." And he tossed down Spare's doublet, with the merry leaves in it, which he had been carrying like a bundle on his little back.

To explain how Spy came by it, it must be said that the forest was not far from the great city where Spare lived in such high esteem. All things

TWO DWARFS RAN UP TO THE OLD WITCH

Scrub and Fairfeather sat leaning against the old tree. The cobbler had a lump of cheese in his hand; his wife held fast a hunch of bread. Their eyes and mouth were both open, but they were dreaming of great grandeur at court, when the old woman raised her shrill voice. and two little dwarfs darted out of the neighbouring thicket.

had gone well with the cobbler till the King thought that it was quite unbecoming to see such a worthy man without a servant. His Majesty therefore appointed one of his own pages to wait upon him. The name of this youth was Tinseltoes, and nobody in all the court had grander notions. Nothing could please him that had not gold or silver about it, and his grandmother feared he would hang himself for being appointed page to a cobbler. As for Spare, the honest man had been so used to serve himself that the page was always in the way, but his merry leaves came to his assistance.

Tinseltoes took wonderfully to the new service. Some said it was because Spare gave him nothing to do but play at bowls all day on the palace green. Yet one thing grieved the heart of Tinseltoes, and that was his master's leathern doublet, and at last, finding nothing better would do, the page got up one fine morning earlier than his master, and tossed the leathern doublet out of the window into a lane, where Spy found it.

"That nasty thing!" said the old woman. "Where is the good in it?"

By this time Pounce had taken everything of value from Scrub and Fairfeather—the looking-glass, the silver-rimmed horn, the husband's scarlet coat, the wife's gay mantle, and, above all, the golden leaves, which so rejoiced old Buttertongue and her sons that they threw the leathern doublet over the sleeping cobbler for a jest, and went off to their hut in the heart of the forest.

The sun was going down when Scrub and Fairfeather awoke from dreaming that they had been made a lord and a lady, and sat clothed in silk and velvet, feasting with the King in his palace hall. It was a great disappointment to find their golden leaves and all their best things gone. Scrub tore his hair, and vowed to take the old woman's life; while Fairfeather lamented sore. But Scrub, feeling cold for want of his coat, put on the leathern doublet without asking whence it came.

Scarcely was it buttoned on when a change came over him. He addressed such merry discourse to Fairfeather that, instead of lamentations, she made the wood ring with laughter. Both busied themselves in setting up a hut of boughs, in which Scrub kindled a fire with a flint of steel, which, together with his pipe, he had brought unknown to Fairfeather, who had told him the like was never heard of at court. Then they found a pheasant's nest at the root of an old oak, made a meal of roasted eggs, and went to sleep on a heap of long green grass which they had gathered, with nightingales singing all night long in the old trees about them.

In the meantime Spare had got up and missed his doublet. Tinseltoes, of course, said he knew nothing about it. The whole palace was searched, and every servant questioned, till all the court wondered why such a fuss was made about an old leathern doublet. That very day things came back to their old fashion. Quarrels began among the lords, and jealousies among the ladies. The King said his subjects did not pay him half enough taxes, the Queen wanted more jewels, the servants took to their old bickerings and got up some new ones. Spare found himself getting wonderfully dull, and very much out of place, and nobles began to ask what business a cobbler had at the King's table; till at last his Majesty issued a decree banishing the cobbler for ever from court, and confiscating all his goods in favour of Tinseltoes.

That royal edict was scarcely published before the page was in full possession of his rich chamber, his costly garments, and all the presents the courtiers had given him; while Spare was glad to make his escape out of the back window, for fear of the angry people.

The window from which Spare let himself down with a strong rope was that from which Tinseltoes had tossed the doublet, and as the cobbler came down late in the twilight, a poor woodman, with a heavy load of faggots, stopped and stared in astonishment.

"What's the matter, friend?" said Spare. "Did you never see a man coming down from a back window before?"

"Why," said the woodman, "the last morning I passed here a leathern doublet came out of that window, and I'll be bound you are the owner of it."

"That I am, friend," said the cobbler with great eagerness. "Can you tell me which way that doublet went?"

"As I walked on," the woodman

said, "a dwarf, called Spy, bundled it up and ran off into the forest."

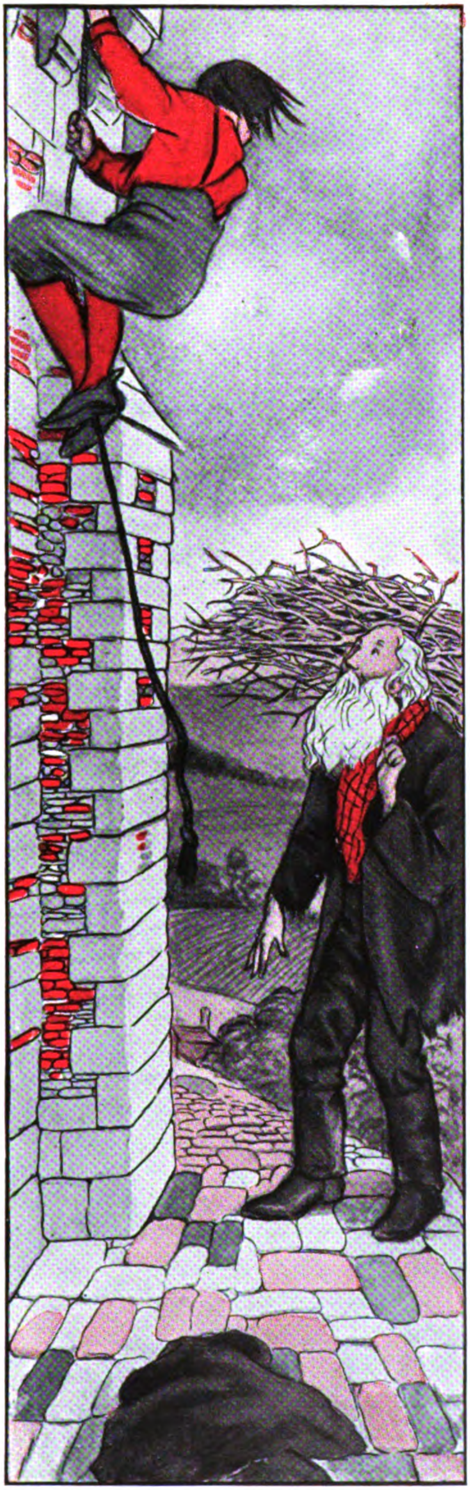
Determined to find his doublet, Spare went on his way, and was soon among the tall trees; but neither hut nor dwarf could he see. At last the red light of a fire, gleaming through a thicket, led him to the door of a low hut. It stood half open, as if there was nothing to fear, and within he saw his brother Scrub snoring loudly on a bed of grass, at the foot of which lay his own leathern doublet; while Fairfeather, in a kirtle made of plaited rushes, sat roasting pheasants' eggs by the fire.

"Good-evening, mistress!" said Spare.

The blaze shone on him, but so changed was her brother-in-law with his court life that Fairfeather did not know him, and she answered far more courteously than was her wont.

"Good-evening, master! Whence come ye so late? But speak low, for my good man has sorely tired himself cleaving wood, and is taking a sleep, as you see, before supper."

"A good rest to him," said Spare, perceiving he was not known. "I come from the court for a day's hunting, and have lost my way in the forest."



THE ASTONISHED WOODMAN STARED AT SPARE

"Sit down and have a share of our supper," said Fairfeather; "I will put some more eggs in the ashes; and tell me the news of court."

"Did you never go there?" said the cobbler. "So fair a dame as you would make the ladies marvel."

"You are pleased to flatter," said Fairfeather; "but my husband has a brother there, and we left our moorland village to try our fortune also. An old woman enticed us with fair words and strong drink at the entrance of this forest, where we fell asleep and dreamt of great things; but when we woke everything had been robbed from us, and, in place of all, the robbers left him that old leathern doublet, which he has worn ever since, and never was so merry in all his life, though we live in this poor hut."

"It is a shabby doublet, that," said Spare, taking up the garment, and seeing that it was his own, for the merry leaves were still sewed in its lining. "It would be good for hunting in, however. Your husband would be glad to part with it, I dare say, in exchange for this handsome cloak." And he pulled off the green mantle and buttoned on the doublet, much to Fairfeather's delight, for she shook Scrub, crying:

"Husband, husband, rise and see what a good bargain I have made!"

Scrub rubbed his eyes, gazed up at his brother, and said:

"Spare, is that really you? How did you like the court, and have you made your fortune?"

"That I have, brother," said Spare, "in getting back my own good leathern doublet. Come, let us eat eggs, and rest ourselves here this night. In the morning we will return to our own old hut, at the end of the moorland village, where the Christmas cuckoo will come and bring us leaves."

Scrub and Fairfeather agreed. So in the morning they all returned, and found the old hut little the worse for wear and weather. The neighbours came about them to ask the news of court, and see if they had made their fortune. Everybody was astonished to find the three poorer than ever, but somehow they liked to be back to the hut. Spare brought out the lasts and awls he had hidden in a corner; Scrub and he began their old trade, and the whole North Country found out that there never were such cobblers. Everybody wondered why the brothers had not been more appreciated before they went away to the court of the King, but, from the highest to the lowest, all were glad to have Spare and Scrub back again.

They mended the shoes of lords and ladies as well as the common people; everybody was satisfied. Their custom increased from day to day, and all that were disappointed, discontented, or unlucky, came to the hut as in old times, before Spare went to court.

SPARE PULLED OFF THE GREEN MANTLE AND BUTTONED ON THE OLD LEATHERN DOUBLET

The hut itself changed, no one knew how. Flowering honeysuckle grew over its roof; red and white roses grew thick about its door. Moreover, the Christmas cuckoo always came on the first of April, bringing three leaves of the merry tree—for Scrub and Fairfeather would have no more golden ones. So it was with them when I last heard the news of the North Country.

LEGENDS OF PLACES AND THINGS

KING WREN

When all the birds came together to choose their king, there was much dispute as to the manner of choosing.

" Beauty is what we want in a king," said the peacock. " Let us show off our feathers."

" No, we need dignity," said the owl. " Let us see who is the wisest looking."

" Or who can talk the best," said the parrot.

But the eagle exclaimed :

" What raises us above all other creatures ? The power of flying. We must choose as a king the bird that flies the highest."

And as the eagle was strong and fierce, he compelled the assembly to agree to this test. At a signal, the birds rose up, and tried to outfly each other, and the eagle soon soared above them all, and went up to an amazing height until his strength was exhausted. Then a wren, who had been perching on his back, flew a little higher than the eagle had gone. So, to the great disgust of the eagle, the little wren became king.

THE POET, THE GOBLIN, AND THE DONKEY

Fairies have more powers of magic than witches, and great poets have more powers of magic than fairies. Great poets can raise up mighty nations with their enchantments, and people the waste places with shining spirits.

Thomas the Rhymer was one of the last of these great poets. He could sing a man's soul out of a man's body, and send it whither he willed. One day the youngest daughter of the Queen of Scotland fell ill of the disease which no leech can cure, and the Queen sent Thomas the Rhymer to get some magic ointment from the goblin hiding in the heart of Ailsa Craig. Thomas the Rhymer came to Ailsa Craig and began to chant strange chants there. He chanted the head of the goblin out of the great rock ; he chanted its shoulders out. But just as he was chanting out its hand holding the magic ointment, a donkey brayed and spoilt his chant, and frightened the goblin clean out of the rock, and the goblin escaped with the magic ointment. So it has happened ever since. Some donkey always begins to bray when a great poet begins to sing. That is why no great poet nowadays can work such marvellous enchantments as Thomas the Rhymer worked before he went to Ailsa Craig.

THE GIANT OF THE PEAK

Kitty Green was a little girl who lived in the Peak district, and one Sunday, instead of going to church, she went for a walk. And she walked until she came to an enchanted mountain, which made everybody who trod on it fall asleep. So Kitty fell asleep, and the giant of the Peak then carried her to his castle, and made her his servant. After Kitty had cleaned his enormous boots, he said :

" Come and hold my golden ring and ball while I bathe, and mind you don't let the ball get into the ring."

Kitty took them, but just as she was wishing she was back at home she let the ball slip into the ring, and she at once found herself at home with her father and mother. Then, every time that she wished for anything, she only had to put the ball in the ring and her wish was at once granted. So she became very rich and happy.

THE BROWNIE OF SNAEFELL

Brownies are different from fairies. They are little clumsy goblins with hairy legs, and they are good-natured, but rather stupid. A farmer in the Isle of Man befriended a brownie, and the brownie offered to bring down the farmer's sheep from Snaefell mountain.

" Whoo ! " he said, when he returned late at night. " That little ram of yours was a trouble. I had to chase him three times round Snaefell before he would come with the other sheep."

" My little ram ? " said the farmer. " I haven't one."

He looked at the sheep, and among them he saw a poor, tired hare ! Now, could you fancy a fairy mistaking a hare for a sheep ? But brownies are like that—good-natured, but rather stupid.

THE FABLES OF ÆSOP THE SLAVE

THE LARK AND HER YOUNG ONES

A LARK once had a nest of young birds in a cornfield, and one morning as she went out to seek food for them she told the little larks to listen very carefully to anything they might hear the farmer say, and to tell her when she came back.

On her return they said that the farmer had been there with his son, and had arranged to ask his neighbours to come upon the next day and help him to reap the corn.

"Then," said the old bird, "there is no danger yet."

Next day the young larks told their mother that the farmer had been there again, and had told his son to ask his cousins to come and help to reap the corn. The old lark still said that there was no danger yet.

On the third day the young birds told their mother how the farmer had said that next morning he would reap the corn himself.

"Then," answered the mother lark, "it is time that we went somewhere else. The farmer's neighbours and friends were not very likely to come and help him; but if he is going to reap the corn himself we must move our home to another field."

If you want a thing done, do it yourself.

THE FOX AND THE WOLF

A FOX had the misfortune to fall into a well, where he was in danger of drowning. He cried out loudly for help, and a wolf happened to hear him, and came running up to see what was the matter.

"Oh, Mr. Wolf," cried the fox, "pray lend me a hand and help me out, or I shall be drowned!"

"Poor creature!" cried the wolf. "How sorry I am to see you in such a fix! How long have you been here? However did it happen? The water must feel very cold. Is it very deep?"

"Come, come! This is no time for talking," said the fox. "Help me out of the water first, and then I will tell you all about it."

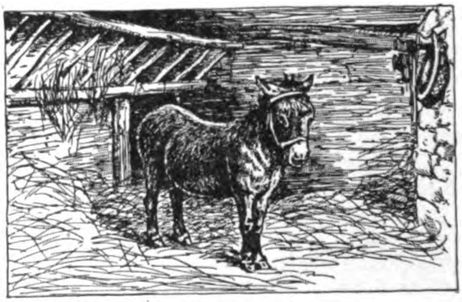
Don't stand talking when there is work to be done.

THE DONKEY'S WISH

ONE cold winter's day a discontented donkey was wishing for a little warm weather and some fresh grass, instead of the cold shed in which he stood and the dry straw that he had to eat.

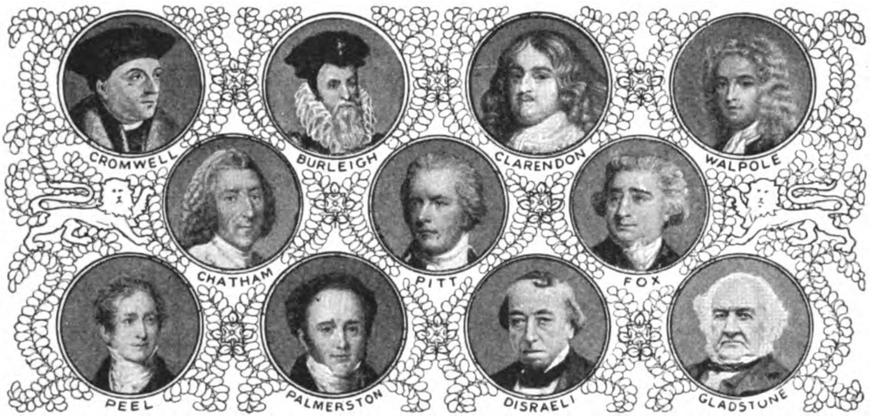
By-and-by the warm spring weather came and the fresh grass with it; but the donkey had now so much work to do that he soon grew tired of the spring and longed for the summer. When summer came he found himself still worse off, for he had to carry hay and vegetables all through the long, hot days.

So he wished for the autumn to come; but when it arrived he had to work hard and carry corn, apples, fuel, provisions for the winter, and so on; until at last he began to long for winter, when, at any rate, he would be able to rest, even if he did not have much to eat.



Try to be contented with what you have. Remember that you might be much worse off than you are.

THE NEXT STORIES BEGIN ON PAGE 2492



TWELVE BRITISH STATESMEN

CONTINUED FROM 2316

Just about the time when Henry Tudor was winning the crown of England for himself by slaying the usurper Richard III. on the field of Bosworth, a very clever boy, whose name was Thomas Wolsey, was being made a Bachelor of Arts at Oxford. Because he was only fourteen, he was called the "boy bachelor," as it was very unusual for a boy so young as that to show learning enough to win what is called his "degree."

The clever boy stayed on at Oxford to be a college tutor and to look after the business of his college. Presently the Marquess of Dorset wanted a tutor for his sons, and he was advised to place them in Wolsey's charge. And the marquess found that Wolsey was so clever and useful that he told King Henry VII. about him, and Henry began to make use of him. He sent him as an ambassador to Scotland and to Flanders. It is said that, when he had been told to go to Flanders, the king was surprised a very few days afterwards by seeing him at court, and began to upbraid him for his delay; but then Wolsey showed him that he was not waiting to start—he had been to Flanders and done the king's business and come back to tell him about it. So it is not surprising that, very soon after Henry VII. died, he became one of the counsellors of his young son, the new king, Henry VIII.

Now Wolsey was a priest, and before long he was made a bishop, and then Archbishop of York, and at last Henry persuaded the Pope to make him a cardinal, and it became the cardinal's ambition to be made Pope himself. But first he made himself so pleasant and so useful to the young king that very soon his advice was taken in everything, and he was allowed to rule England, so that the two great princes of Europe—Francis, King of France, and Charles V., Emperor of Germany—each tried hard to gain his friendship and so to get England for an ally. But Wolsey wished never to become wholly bound either to the one or the other, but to keep both of them doing what he wanted them to do for fear that he should make England the ally of the other; and he managed for some while to do this without letting England go to war on the side of either of them. He made both of them feel that the goodwill of England was much more important than it had been counted for many a year past.

Through the favour shown to him by the king, Wolsey became very wealthy, and he liked to make a great display, and to make the English nobles feel that he was a mightier man and of more account than any of them were. And seeing that he was a man of humble birth, whose father was no more, as men reported, than a butcher, the nobles were the more wroth at his insolence, and hated him bitterly and longed for his undoing, though on that account he himself took the more pride in his own greatness.

THE BITTER LAMENT OF CARDINAL WOLSEY WHEN THE KING FORSOOK HIM

But, for all his power, Wolsey was to learn that he might not cross the king's will, for thereby he wrought his own downfall. For the king wished to be rid of his wife that he might marry another, and he wished to have the Pope declare that, though they had been wedded, the marriage had been unlawful. Then, because Wolsey could not or would not persuade the Pope to do this, though he made a great show of striving to do the king's will, Henry turned on him, and deprived him of all his offices except the Archbishopric of York, and soon after that he summoned Wolsey to London to be tried for treason, though he knew well enough that no king ever had a more loyal servant. So Wolsey, being very ill, travelled towards London, but died on the way, at Leicester Abbey. Very sad and very famous were the words of the dying cardinal: "Had I served God as faithfully as I have served my king, He would not have left me thus, in my grey hairs."

Wolsey had a secretary named Thomas Cromwell, a man very shrewd and hard, yet faithful to him even after his fall. He, too, was of low birth, an adventurer who had run away from his father while yet a boy, and had tried his hand at many trades, in many lands, but chiefly in Italy. Then he had come back to England, and set up as a lawyer, so it happened that the cardinal employed him on some legal business, and found out how clever he was.

HOW THE KING'S MINISTER COVERED THE WHOLE LAND WITH SPIES

Now, because he stood up stoutly for the cardinal when there were few who would speak a good word for him, the king, instead of punishing him, took him into his own service. Then Cromwell—remember that he was not the Oliver Cromwell, who became Lord Protector more than a hundred years later—advised Henry how he might become the most powerful and wealthy king that ever had reigned in England; and Henry thought his plan was so convenient that he set Cromwell himself to carry it out.

Now, the plan was, in the first place, to take away the wealth and the lands which belonged to the Church, and especially the monasteries, and to give them to the king; and, in the next place, to manage so that the king should be able, without breaking the law, to put to death everyone who opposed his will. Then Cromwell covered the whole land with spies who should report every word that was spoken against the king, and those who uttered such words, or were silent when they heard them uttered, were charged with treason, and the judges and juries always found them guilty, so that Cromwell was hated and feared more than ever his old master, Cardinal Wolsey, had been.

THE FALL OF THOMAS CROMWELL AND THE RISE OF WILLIAM CECIL

He sent officers to gather tales of the evil doings of the monks till he was able to paint so foul a picture of their misdeeds that the Parliament, which liked the monks none too well, cried out that the monasteries should be destroyed and their lands given to the king. That is why there are so many famous ruins of beautiful old abbeys at this day in many parts of England. But as for Cromwell himself, he, too, crossed the king's will, by persuading him to marry a wife to whom Henry, when he saw her, took a great misliking. Therefore Cromwell, after the example which he had himself set, was charged suddenly with treason, and condemned to die under the executioner's axe.

Of the men who ruled England as Ministers of the Crown, the next of whom we have to tell is William Cecil, who became Lord Burleigh. He is famous not only for the loyal service he did when Elizabeth was queen, but because he was the first of the family of the Cecils, not a few of whom were famous statesmen in their day; but most of all William Cecil's second son, Robert, Lord Salisbury, who was Elizabeth's chief Minister at the end of her life, and James I.'s after her; and another Robert, who was Marquess of Salisbury, and was Queen Victoria's

THE CLOSE OF TWO GREAT CAREERS

When Charles II. was exiled from England, Lord Clarendon shared his exile, sometimes having neithe clothing, food, nor money. At the Restoration his reward for his faithfulness was that he became Chancellor and his daughter married the king's brother. But Clarendon was overbearing, and pleased nobody. Here w see him leaving Whitehall Palace after his fall from power, the king turning his back upon him and walkin towards the gate. Clarendon went to France, and died in disgrace, an exile from his country, seven years later

The great Earl Chatham was in his young days one of England's most eloquent statesmen. When he was i power England was everywhere successful, but George III. did not like him, and dismissed him. Things di not go well after that, and Chatham's last speech in Parliament was to protest against the muddling of th Government. This picture shows us the end of that speech; the exertion was too much for him and whil speaking he sank into his seat in a fit, from which he died a few weeks later, mourned by the whole British nation

Prime Minister at the end of the nineteenth century, in which many of us were born. Yet the great Lord Burleigh was Elizabeth's counsellor rather than the ruler of England, for she went her own way, which very often was not his. The wise things she did were nearly always what he advised, and many times when she seemed about to do some foolish thing, she paused at the last moment and allowed him to guide her. So that it was in great part due to him that England was so wisely governed in her reign and became so powerful, as we have read in the stories of England and her queens. For forty years he was the great queen's chief adviser—no other English statesman has ever held that position for so long a time—and at last he died, full of years and honours, at the age of seventy-eight, five years before his Royal mistress.

LORD CLARENDON AND HIS DAUGHTER WHO BECAME A QUEEN

We may pass over the Ministers ot James I. and of Charles I. and the great Oliver Cromwell, for we read about them in other parts of this book. But we must speak of the first Minister of Charles II., who helped to seat him securely on the throne. This was Edward Hyde, who had been on the side of the Parliament before the Civil War, but had joined the king's party, like Lord Falkland, when he thought the Parliament men were going too far, and the Puritans were trying to overthrow the Church of England. Then he had become one of Charles I.'s chief counsellors; and when the king was slain, and young Charles II. had to live in exile, Hyde stayed with him, and was his chief adviser. Charles made him Earl of Clarendon, the name by which he is best remembered.

Clarendon was a grave man, wno disliked violence, and he would not let the Royalists punish the other party as they would have liked to do. But his love for the English Church made him pass very harsh laws against everyone who preferred other ways of worshipping God, so that the Puritans hated him. But he also disliked the wild ways of King Charles II. and his Court, so that the king forgot his great services, and the courtiers hated him. And between the courtiers, and the Puritans, and the discontented Cavaliers, he was driven from the country and ended his days in France, where he wrote the famous "History of the Great Rebellion." His daughter, Anne Hyde, was married to the Duke of York, who afterwards became James II.; and she was the mother of two queens—Queen Mary, the wife of William of Orange, who took the crown away from James; and also of Queen Anne.

HOW SIR ROBERT WALPOLE STORED UP WEALTH FOR ENGLAND

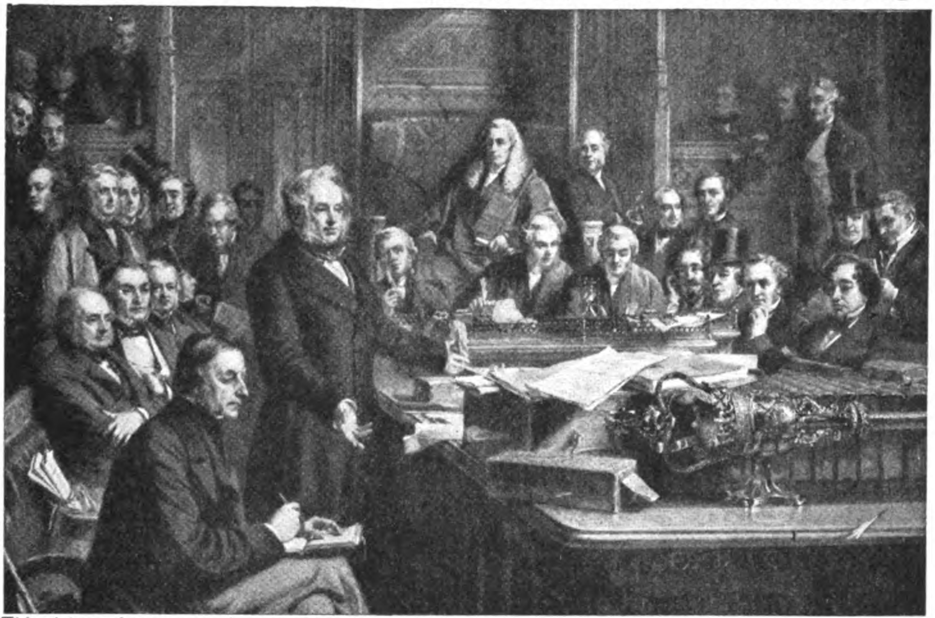
After the fall of Clarendon, fifty years passed before it could be said that there was any one great Minister who ruled England. No one could certainly be called the chief Minister until we come to Sir Robert Walpole. Walpole was a country gentleman with a very shrewd head for money matters. A few years after George I. came to the throne he became George's Prime Minister, and remained so for twenty-one years, far into the reign of George II. It was his great desire to make England a very wealthy country, so that the people should be contented and prosperous; and while the nations of Europe were fighting each other, he succeeded in keeping England out of those wars for eighteen years, so that she was storing up wealth while other nations were wasting theirs.

And so, when war did come, she could afford to spend a great deal more than her neighbours. In this way Walpole did great good to England; but he did harm, too, for people began to forget that, though wealth is a good thing, there are other things which are better than wealth. And he made matters worse by showing clearly that he believed almost anyone could be persuaded by money, and that nearly everyone cared very little whether what he did was right or wrong, if only he were well paid for doing it.

THE FIRST WILLIAM PITT, THE ONLY MAN THE PEOPLE TRUSTED

But a few years after Walpole was dead a very different man came to the head of affairs. This was William Pitt, a fiery orator, who had often attacked Walpole. He loved his country, and he loved justice passionately; he believed in men who, like himself, cared more for their own honour and their country's glory than for their own wealth. He would neither take a bribe himself nor

SCENES IN THE HOUSE OF COMMONS



This picture shows a meeting of the House of Commons in the time of Lord Palmerston, who is standing speaking to his colleagues. Lord Palmerston was the most popular British statesman since Chatham. His one passion in life was the prosperity and grandeur of his country, and on the Continent he is still known as "Firebrand Palmerston." But he was not so cautious as he should have been, and was compelled to resign.

It is not easy to master the House of Commons, and when Mr. Disraeli got up to speak in the House his appearance and his manner were both against him. Men laughed at this young dandy, who expected them to listen to him, and at last Mr. Disraeli gave way. But before he sat down he faced his interrupters, and said, "I have begun many things many times, and I have often succeeded at last. Ay, sir, and if I sit down now, the time will come when you will hear me." And, as we all know, the prophecy did come true later.

give a bribe to others; he had no fear of any foreign foe, and he would not suffer England to desert an ally for any gain to herself. And so, when a great war broke out in which Great Britain and Prussia were joined against France and Austria, George II. found that Pitt was the only man whom the people of England would trust.

He soon showed that he was the one man who understood how that great war ought to be managed; and he used so well the riches that Walpole had got together that, when the war was over, the French had been driven out of America and India for good and all, and there was no one who could face the English sailors on the seas. Yet after that time Pitt was never able to rule the country again, for his temper was so strange that even men who admired him could not work under him; so that, though he had great and wise plans, he was never able to carry them out, or to prevent the blunders of the foolish people to whom the business of ruling the country was given.

HOW THE FATHER WAS MOURNED BY THE NATION AND THE SON SUCCEEDED HIM

And yet all men in England knew him for the greatest Englishman of his time. Men called him the "Great Commoner" in the days when most of the power in the country was in the hands of the noble families; but when he became too ill for hard work in the House of Commons he was made Earl of Chatham. There is a famous picture which shows how he appeared for the last time in the House of Lords to protest against Great Britain yielding to France and allowing the American colonies—which became the United States of America—to break away by the help of the French. He fainted while he was making his last speech, being terribly ill when he allowed himself to be carried down to the House to make it; and a short time afterwards he died, mourned by the whole nation. His statue is in Westminster Abbey.

About six years after Chatham's death, his second son, William, who is called "the younger Pitt," became Prime Minister of Great Britain, being only twenty-four years old. Except for a very short time, when he retired because he had promised to treat the Irish Roman Catholics in the same way as the Protestants, and George III. would not let him keep the promise, he was Prime Minister for the rest of his life.

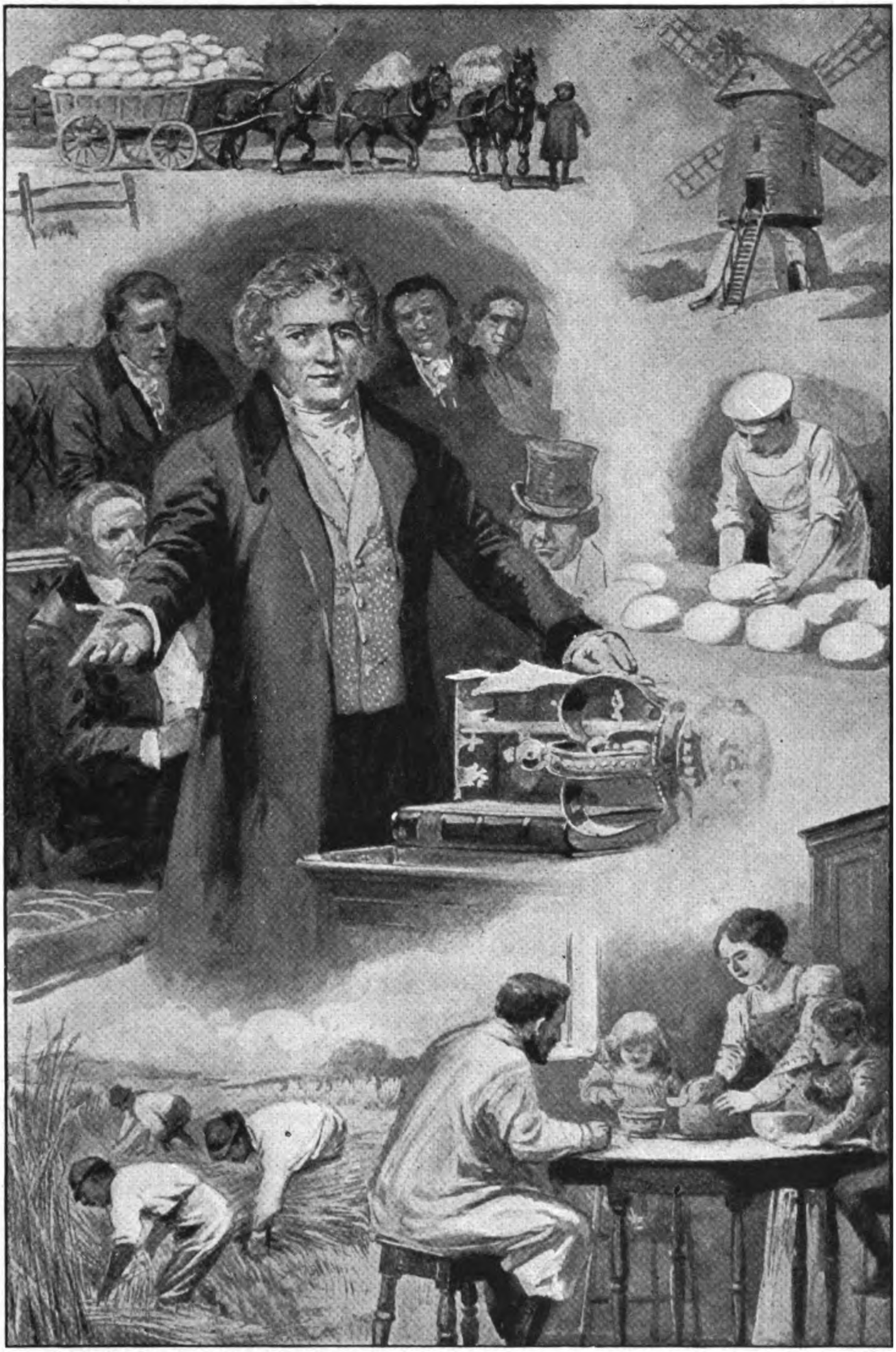
HOW THE YOUNG PITT UNITED THE NATIONS AGAINT NAPOLEON

It was in his time that the French Revolution took place, and when the French Republicans cut off the head of their king, and declared that they would help all the nations of Europe to get rid of their kings and set up republics, Pitt went to war with France; and for all the rest of his life he was constantly striving to make the nations join together against the efforts of the French and their great general, Napoleon Bonaparte, to make the other countries do their bidding. Though Napoleon defeated one country after another until nearly half of Europe was under his rule, Pitt never yielded to him. Neither Pitt nor any other of the statesmen in England at that time were very skilful in managing wars, but Pitt taught them all that Britain must never submit as other nations had done; and in the long run this resistance of Pitt helped the other nations to throw off the yoke which Napoleon had laid on their necks. But that was not till after Pitt had been dead for some years. Almost the last thing that happened before Pitt's death was Nelson's great victory at Trafalgar; but nearly at the same time Napoleon won a great victory on land at Austerlitz over the Russian and Austrian armies. which were fighting against him, and Pitt died, fearing that all the efforts of his life would prove in vain. His last words were: "My country! How I love my country!"

CHARLES JAMES FOX, WHO LOVED THE FRENCH BUT OPPOSED NAPOLEON

William Pitt's great rival was Charles James Fox, whose father had at one time been a rival of Pitt's father. Fox was the leader of the Whigs, who saw what there was of good in the French Revolution, in spite of all the terrible crimes that were committed. Those Whigs believed that it would be better for Europe that France should succeed than that she should be defeated, and they tried always to bring the war to an end, not because they feared France, but because they dreamed that a peace might be made which would be good for everyone—for they were anxious that the people should have their proper

SIR ROBERT PEEL AND CHEAP BREAD



Long ago, when corn was taxed as it went into England, bread was so dear that poor people were often unable to buy it, and it was Sir Robert Peel who, realising the great misery caused by the Corn Laws, persuaded Parliament to abolish them. In the central picture on this page Sir Robert Peel is seen pleading with Parliament for the poor. He gave the people cheap bread, and, though he lost his high place in Parliament, he won for himself a reward which will be his for all time—the gratitude of the poor.

share in the government, whereas the other party had taken fright, and thought that if the people were allowed any share of power they would imitate the crimes of the French Revolution.

But when the war was no longer against the French Republic, but against the despotic Emperor Napoleon, Fox had less belief that the world would be the better for the triumph of the French, and so, when Pitt was dead and everyone knew that Fox was the ablest man in Parliament, he at last became Minister. But he only lived for eight months more — just long enough to learn that no peace which could be made with Napoleon would be lasting or useful. After that the Whigs did not get a share in the government again till long after the war was all over, and a great many of the Tory party were ready to ask for most of the changes which the Whigs wanted, but which the other Tories would not grant.

SIR ROBERT PEEL, AND WHY THE POLICE ARE CALLED BOBBIES AFTER HIM

About this time two young men entered Parliament who were to become leading statesmen. One was Robert Peel, and the other was the famous Lord Palmerston. Both belonged to the Tory party. Peel was the son of a great manufacturer in the North of England; Lord Palmerston was an Irish peer or nobleman. Both of them were clever, and before very long Peel, who was an extremely sensible man of business, became one of the leading men.

Now, although Peel disliked changes, and thought that our country was governed in a better way than any other, he was one of the very few men who can learn to own that they have been wrong, and as he grew older he persuaded the Tories to make several changes which he had once opposed very strongly. Peel created the London police force, and that is why they were called Peelers and are still called Bobbies, because his name was Robert. And he did away with the old laws under which people used to be hanged for quite small crimes, like picking pockets, and things for which nowadays they would only be sent to prison for a month or even a week. He persuaded the Tories, too, to abolish the laws which interfered with Roman Catholics. But the most remarkable of his doings was that, when he was Queen Victoria's Prime Minister, he saw how necessary it was for people to be able to buy bread, even though they might be very poor; and so he abolished the Corn Laws, which forced people to pay a very high price for the grain of which bread is made, although the Tories were very much against it, because it meant that the farmers would get very much less money for their wheat.

HOW PEEL FELL FROM POWER AFTER GIVING THE POOR CHEAP BREAD

But by doing this Peel quarrelled with most of his party in Parliament, while he could not join himself to the other party; so that by the greatest act of his life he put an end to his own leadership of the nation. Yet he himself named the reward which will be his for all time, in these noble words: "It may be that I shall leave a name sometimes remembered with expressions of goodwill in the abodes of those whose lot it is to labour, and to earn their daily bread by the sweat of their brow, when they shall recruit their strength with abundant and untaxed food, the sweeter because it is no longer leavened by a sense of injustice." It was not very long after this that Peel was killed by a fall from his horse.

Although Palmerston started as a Tory, he joined the Whigs later, just before they began to be called Liberals instead of Whigs, and just before the Tories began to be called Conservatives. Although he did not become Prime Minister till he was quite an old man, for a great many years before that he had managed all dealings with foreign countries very much as he chose; and even now, when the English Parliament gives way to some foreign power for the sake of peace, people very often say: "Pam would never have stood that."

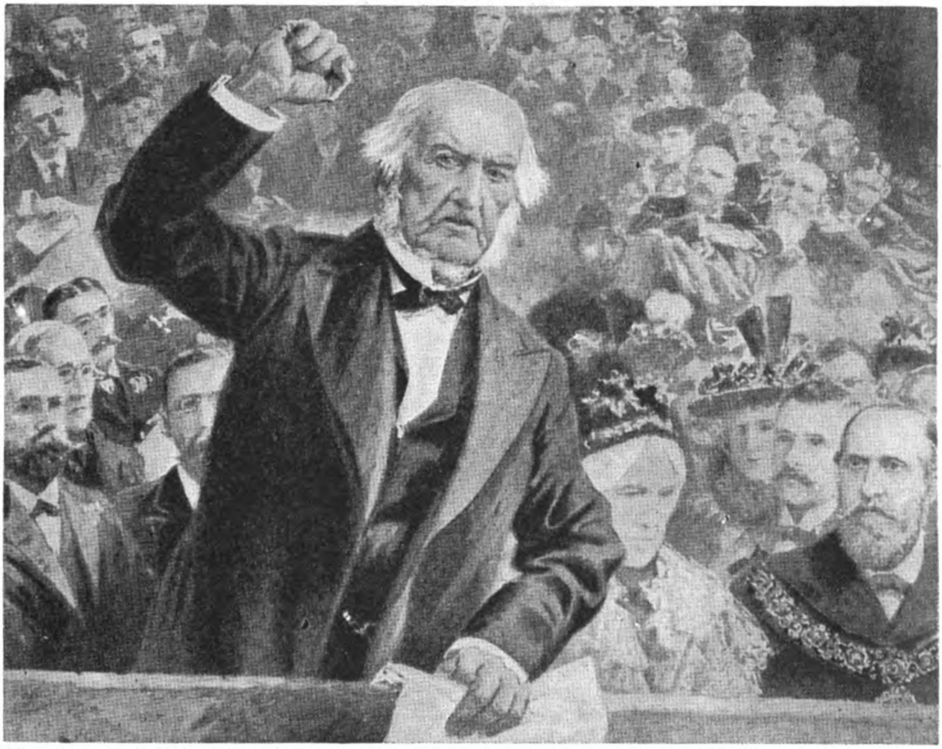
PALMERSTON, WHO WAS CALLED PAM, & THE RISE OF GLADSTONE & DISRAELI

He was always called Pam, because the name seemed to fit on to the light-hearted, boyish way in which he did things, even when he was eighty years old. If you look at the volumes of "Punch" fifty years ago, you will always see Pam with a straw or a twig between his lips, looking like a schoolboy dressed up as an old man.

And now we must know something of two great statesmen who were rivals

MR. GLADSTONE, THE OLD MAN ELOQUENT

Mr. Gladstone was the wonder of British political life, and those who knew him can hardly forget the spectacle of this old man in the evening of his days. Few men have shown such tremendous energy at so great an age as he. He was 83 when he braved a stormy agitation in Parliament on behalf of Ireland, and this picture shows him introducing his second Home Rule Bill into the House of Commons, crowded with eager listeners.



The man who had been four times Prime Minister retired from public life in 1894, but he spoke again at Liverpool in 1896 when he was 87. The people of England were stirred by the sufferings of the Armenian people, who were oppressed by the Sultan of Turkey, and "Oh, for an hour of Gladstone!" were the words which came to men's lips. This picture shows a meeting at Liverpool enjoying an hour of Gladstone, for Mr. Gladstone left his Temple of Peace at Hawarden Castle, and thrilled the nation with the last of his great speeches.

for most of their lives—Benjamin Disraeli, who became Earl of Beaconsfield, and died in 1881, and William Ewart Gladstone, who lived seventeen years longer.

Disraeli was of Jewish descent. The first time that ever he spoke in Parliament, there were many who would hardly listen to him, jeering and interrupting; but he turned on them, declaring that one day the House would have to hear him; and his words came true. He began as a Radical, which means an extreme kind of Liberal, but he very soon joined the Conservatives, which means one who dislikes change and would keep, or *conserve*, the good in things as they are. Though many years passed before they trusted him, Disraeli still managed to make the Conservatives feel that he was their real leader. He was a very clever man, whose greatest aim was to make his country powerful and to show other nations that she was not afraid of them, as Pam had done. The way in which he did this when at last he really became Prime Minister made him the hero of his party, the members of which still wear primroses on his death-day, and call it "Primrose Day," because the primrose was supposed to be his favourite flower.

Gladstone began as the most promising of the young Tories. Like Peel, he spent his life moving forwards—learning to think that things he had once held dangerous had become necessary. He was one of those great orators whose words move great masses of men to passionate enthusiasm; and was so skilful of tongue that he could make men listen with pleasure even to speeches about figures and other things which are very dull and uninteresting when most men talk about them. He followed Peel about the Corn Laws, and before long became the real leader of the Liberals. It was his great conviction that even a big powerful country should always do what is right and just, even if it suffers for doing it, and some people thought that that made him too ready to fancy injustice where there was none; and to be unjust to one set of folks in order to give what he thought justice to another set; and to neglect the safety of Great Britain rather than let her inflict imaginary wrongs on others. But other people held that he did none of these things, but set such an example to statesmen all the world over as would make an end of war if it were only followed. However, as for what Lord Beaconsfield and Mr. Gladstone did, and whether their acts were right or wrong, or wise or foolish, people do not at all agree; though perhaps when we are grown up, with children of our own, folk will not quarrel about it as they do to-day. Great Britain is still divided in opinion as to what kind of policy is best; but more and more men are coming to see that the real welfare of the nation is the thing that matters.

MR. GLADSTONE & HIS GRANDCHILD, DOROTHY DREW

The next stories of Men and Women begin on page 2467.

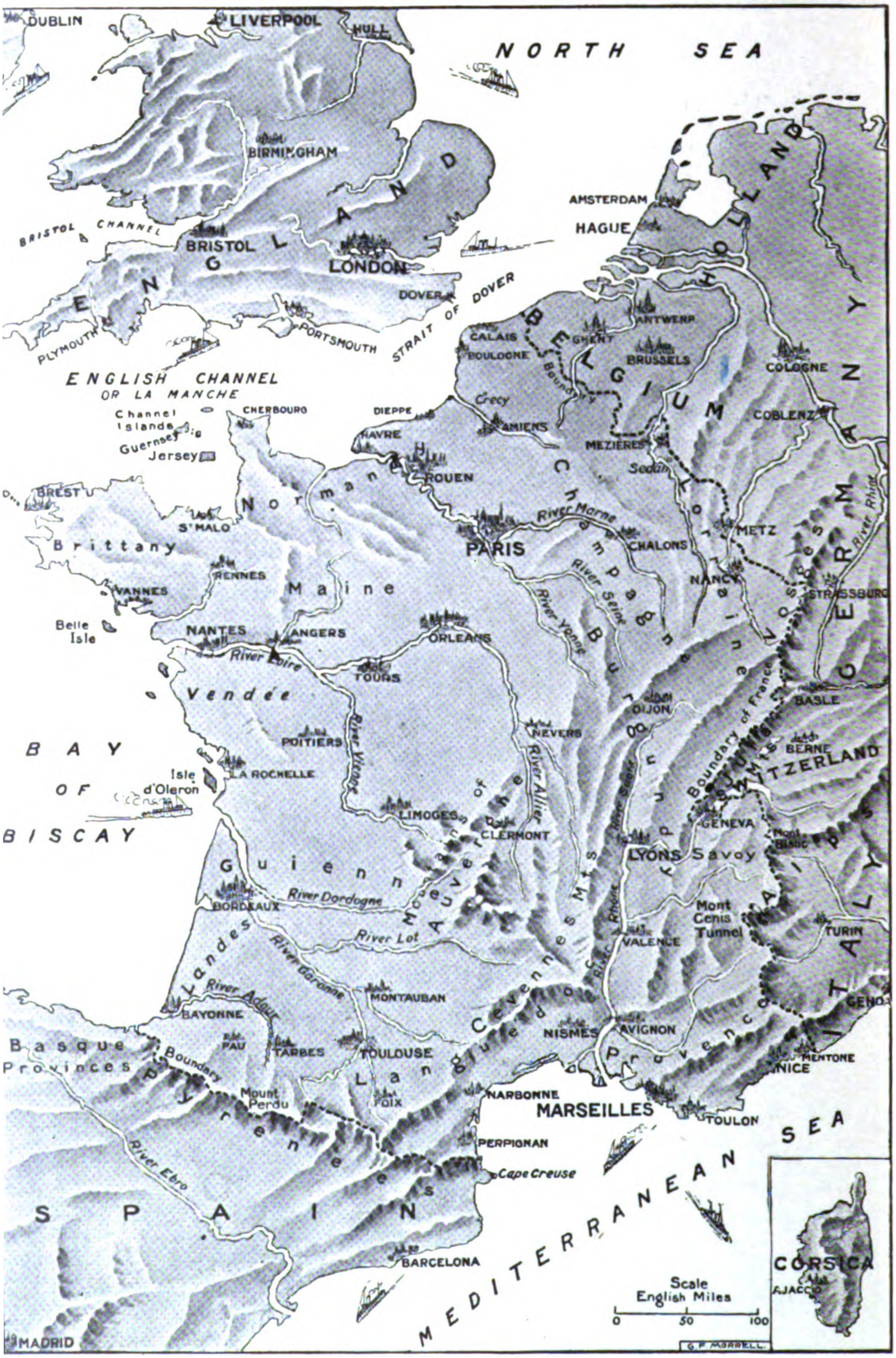
THE MAN WHO SERVED HIS KING

Cardinal Wolsey was a proud and arrogant man, but, although disliked by the people and detested by the nobles, it was only when the king turned upon him that he fell from power. In this famous picture, by Mr. Seymour Lucas, we see the fallen statesman after his dismissal from office, when his wealth and estates had been taken from him, so that he was left in poverty, and no office remained to him but the Archbishopric of York.

Cardinal Wolsey had many enemies, who plotted against him after his fall and accused him of treason. He was arrested and ordered to London to take his trial. At Leicester, however, the cardinal turned aside to the abbey, where he was received, as we see here, with great reverence. "Father Abbot, I am come hither to leave my bones among you," he said. Broken in health and spirits, he never recovered.

The photographs of Gladstone on pages 2379 and 2388 are by Valentine, and that of Disraeli is by Hughes & Mullins, Ryde. The top picture on this page is by Seymour Lucas, R.A., and the top picture on page 2387 is from an engraving by H. Graves & Co.

FRANCE AND HER MANY NEIGHBOURS



Jnlike Great Britain, France has many neighbours which actually touch her, as shown in this map. The map ılso shows the principal rivers and mountains of France, and from it we can see how much bigger France s than England. The place where the different countries join one another is called the frontier, and his is marked by a dotted line, though usually there is nothing to mark a frontier but an occasional ost, unless sometimes, as between France and Spain, a chain of mountains forms a natural frontier.

This is, perhaps, the most famous square in Europe. In the days of the Terror it was known as the Place de la Revolution; but it has now been named the Place de la Concorde, or the Place of Peace

FRANCE AS IT IS TO-DAY

CONTINUED FROM 2277

THERE are many famous sayings about that beautiful country, "La Belle France," that have come down to us from the lips of those who knew her in the far past. Let us take two of them, that all French children know well, as a guide to our picture of France to-day.

There was a learned and brave Dutchman named Grotius, who spent much time in France during the reign of the good King Henry IV. and his son—about the time of Queen Elizabeth. When Grotius was asked what he thought of France, he answered earnestly: "France is the most beautiful kingdom there is—after the Kingdom of Heaven."

Then, again, hundreds of years before Grotius said this, there was an old traveller and geographer named Strabo—the first, as far as we know, who tried to give an interesting account of countries, not a mere list of names—who wrote with enthusiasm, when France was still Gaul, about the grand mountain masses in the south and south-east, about the fine spreading rivers, about the seas brought near by a protecting God. "Gaul," said Strabo, "must one day be the most flourishing place on earth." Now let us try to find out what was in the mind of Strabo when he spoke of the bounding seas, the mountain masses, the spreading rivers, and their influence on the future greatness of the country.

It is a wonderful point in the position of France that, though part of a great continent, it has many of the advantages of an island. It can send ships direct across four seas. By way of the North Sea it can trade easily with Germany and the Baltic countries; across the narrow Channel, which the French call La Manche—meaning "the sleeve," from its shape—it has constant and quick communication with England. France is so near to England that more than once the possibility of making a tunnel under the sea from Dover to Calais has been discussed. If this were done trains could carry passengers and goods from either side as easily and quickly as from London to Dorking, or any other journey of twenty miles.

At present one must face a sea voyage, often very rough and unpleasant, lasting about an hour, for they still depend on the constant service of the various steamer routes which act as links to bind not only England and France closely together, but England to the whole continent of Europe, and to the great Eastern world beyond. But this communication with the narrow seas is not all. The ports on the west of France face the great Atlantic highway to the New World; and the blue, tideless Mediterranean on the south carries not only the commerce of all South Europe and North Africa, but the fleets of ships taking the direct line to the East by way of the Suez Canal—that first wonderful ship canal, built by a Frenchman.

THE BOUNDARIES OF FRANCE BY LAND AND BY SEA

But France has land frontiers as well as the ever restless, hungry seas. There are the snow-tipped Pyrenees, stretching from the Atlantic to the Mediterranean„ still keeping guard between France and Spain. It was in vain that Louis XIV. cried out so triumphantly when his grandson came to the throne of Spain: "The Pyrenees are no more," for the white peaks still look down over the grand passes and green slopes, where shepherds tend their flocks, to France on the north, to Spain on the south.

Thousands and thousands of valuable and heroic French lives have been spent through the centuries in guarding or in trying to extend the land frontiers on the east of France, from the days of Charlemagne to those of Napoleon III. In many parts, especially in the low lands of Belgium and on the wooded sides of the Vosges Mountains in Germany, the battlefields lie too thick to count. The Jura Mountains separate France from Switzerland, and the great mass of mountainous land south of Lake Geneva lies between France and Italy. This grand country is the western end of the highest land in Europe, which stretches right across Switzerland and the Tyrol to the Danube. The highest peak, Mont Blanc, the white mountain, is in France, and is three and a half times as high as our Ben Nevis.

THE FOUR COUNTRIES THAT FRANCE TOUCHES ON HER EASTERN BORDERS

Here, then, are the four countries which France touches on her eastern borders—Belgium, Germany, Switzerland, Italy. On these frontiers are forts and strong towns, and thousands of soldiers are massed in silent watchfulness, and baggage is carefully examined to see that no smuggling goes on. But these frontier barriers are in truth the great outlets by which France is connected with the very heart of Europe. All day and all night trains pass uninterruptedly over the frontiers, from Paris, Lyons, Marseilles, and other great junctions, carrying passengers and goods to every capital and every centre of industry in the wide continent. Lines run down into Spain, by each end of the Pyrenees, near the sea-shore, and even the massive Alps are now no barrier as they were of old; for French skill has pierced the tunnel of Mont Cenis, and the train quickly passes from the land of dazzling snow and glaciers to the land of dazzling sunshine, gay flowers, and blue lakes.

Now, the size of this country thus bounded by sea and land is nearly twice as large as that of the United Kingdom. The whole of France lies in the middle of the temperate zone, half-way between the icy cold of the North Pole and the burning heat of the equator. Added to the advantage of the moderate climate that this position gives it, it is also neither too damp nor too dry, for the west winds—like those that help England's dairy farming and cotton industry—bring plenty of rain, which in turn is dried up by the land winds from the north-east.

THE GREAT GROUP OF HIGH LANDS IN THE CENTRE OF FRANCE

But we have spoken only of one of the mountain masses mentioned by Strabo. The other is the great central group of high lands which the French call the "Massif Central." This is the most prominent feature in the country, and goes far to make the face of France what it is. The valley of the Rhone separates the "Massif Central" from the "Massif" of the Alps, and a narrow plain separates it from the great chain of the Pyrenees. The Massif Central is not nearly so lofty as the Alps and the Pyrenees, being more nearly the height of the Jura and the Vosges; but it extends over nearly a fifth part of France, forming a most wonderful and beautifully varied country in the old province of lovely Auvergne. The chain of the Cevennes, rising from the Rhone valley, forms part of this central plateau of high land.

In the mountains of Auvergne, we see the fantastic shapes of the old volcanic peaks, which ages ago poured out streams of fiery lava, and clouds of stones

THE GAY AND BEAUTIFUL CITY OF PARIS

No big city in Europe is more beautiful than Paris, with its palaces and churches and other public buildings, of which the people are justly proud. Here we have a general view of the city as seen from the Louvre, once a palace, now a famous museum. We are looking along the River Seine towards the cathedral of Notre Dame.

Paris abounds in places of amusement of all kinds, and the leading theatres receive a large sum of money every year from the Government towards their support. It cost over five million dollars to build the lovely Opera House which we see here. Standing in the heart of Paris, it is one of the great glories of the capital.

Paris has been made beautiful by being built according to a plan, instead of growing up through centuries, as London did, and this view of the city, taken from the top of the great triumphal arch erected to Napoleon, **shows us how splendidly its builders have laid out its many fine, wide streets and avenues, planted with trees.**

and ashes. To-day their "mouths" hold dark lakes, or cattle feeding on soft, rich, green grass. The bare, bold granite heights, and deep rifts in which the rivers run 1,500 feet below, make a fine contrast with the fertile lower slopes and valleys. It was in the quiet, smiling valleys of the Cevennes that some of the bitterest persecutions of the Protestants took place in the bad days of Louis XV.

THE GREAT SPREADING RIVERS THAT RUN THROUGH THE VALLEYS OF FRANCE

And now we come to the "spreading rivers." From the great and varied Massif Central, the face of France slopes gently towards the Channel and the Atlantic, forming the vast plains of the north-west and the south-west. Towards the Mediterranean, the slope is more steep. In the large plains lie three out of the four great river systems of France, which spread over it like the veins of leaves; they are the Seine, the Loire, and the Garonne. The hills that rise on the immense plains serve but to give a gentle rise to the otherwise flat country, and to guide the courses of the numerous streams and rivers.

We have already glanced at the Rhone, the most rapid of French rivers, in the part of its course between the Alps and the Cevennes. It rises in the snows of Switzerland, passes through Lake Geneva, and soon after turns sharply south, as it receives the slow Saône from the Vosges. In the angle formed by the meeting of the two rivers lies the great city of Lyons. The Rhone valley has always been the chief highway between the north and south, from the days when the Roman traders and soldiers pushed their way through the forests and swamps to the time when the Marseilles battalion marched to Paris, as told on page 2272, and the Paris and Marseilles coach lumbered along from town to town, after the fashion of our own coaches in the beginning of the last century.

THE LONG RIVER LOIRE AND THE SEINE THAT WINDS SLOWLY TO PARIS

The Rhone forms a marshy delta where it joins the Mediterranean, and there are sandbars across its mouths. Marseilles, the greatest port in France, lies to the east of the delta on the stormy Gulf of Lions—so named after the violence of the storms, not after the city of Lyons.

The Garonne is the other great river of the south, rising in the Pyrenees, and collecting on its right bank numbers of streams from the mountains of Auvergne in the great central highlands. Its waters pour into the Atlantic through a wide and long mouth, called the Gironde, below Bordeaux.

The Loire, the longest of French rivers, three times longer than the Thames, flows in a great semicircle from the Central Mountains, joined on its way by many tributaries; its waters also pour into the Atlantic. Both the Garonne and the Loire are subject to great floods, and dykes are built in many places to prevent the waters bursting over the plains. It is a sad calamity when the flood proves too strong. The fields then all lie under water, and in towns people have to go about in boats; often many are drowned, and their homes destroyed.

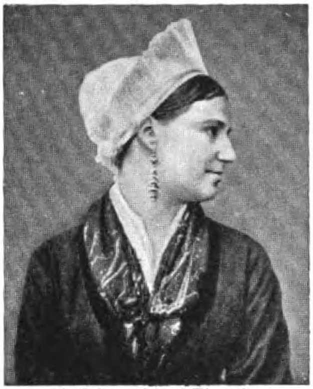
The slow, winding Seine—its name means the Tranquil—rises in the hills on the right bank of the Saône, and, joined by the Marne at Paris, flows through Rouen, to the chief port of North France, Le Havre, on the English Channel. It carries more merchandise than any of the other great rivers

THE WATERWAYS THAT BEAR GOODS FROM ONE END OF FRANCE TO THE OTHER

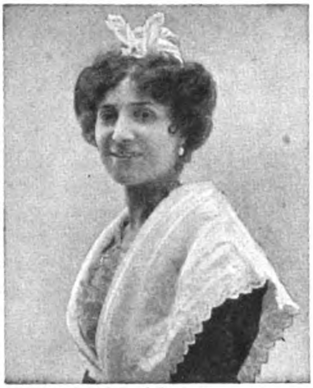
It is reckoned that France has 150 rivers on which boats of various sizes can carry goods a long way inland, which is a great advantage, as so much of this solid-shaped country is far from the sea. But there are, besides these rivers, hundreds of miles of canals, some connecting or improving the different river systems, some joining the Atlantic and the Mediterranean by the valley of the Garonne, some joining the Rhone, above its delta, with the sea. And so it is that many kinds of heavy goods, for which there is no hurry in transport, can be carried by water from one end of the country to another.

Sometimes the canals go through tunnels in the hills, sometimes they are carried by aqueducts across valleys. It is a strange sight to see a barge with sails crossing by an aqueduct high up in the air. On and on these barges go, on their "inland voyage," day after day, generally drawn by a horse, sometimes taken in tow by a launch, past the banks of blue forget-me-nots; past the groups of laughing children in blue smocks and

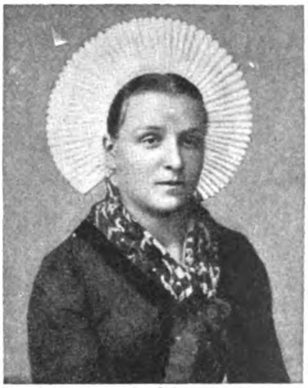
PICTURESQUE PEOPLE OF FAIR FRANCE



A fisher-girl of Picardy

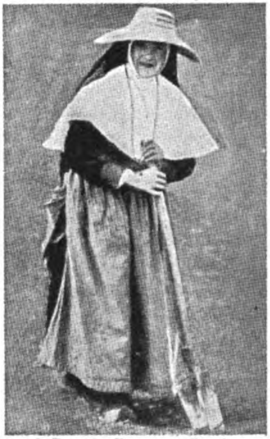


A girl of Provence

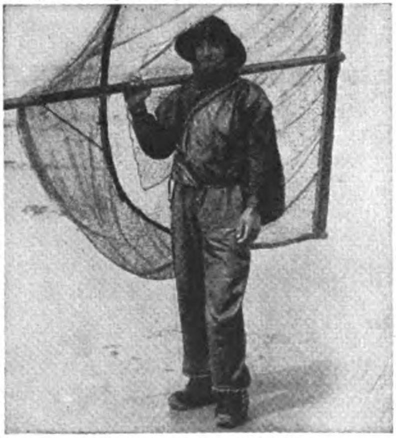


A Normandy fisher-woman

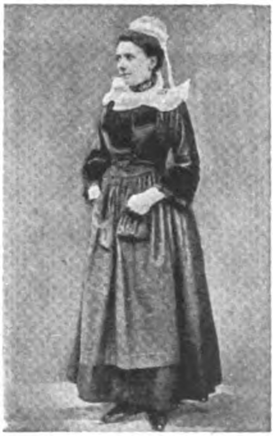
Peasants of the country round Paris; from a painting called "The Gleaners," by the French artist, J. F. Millet.



A Bernardine nun digging



A northern prawn-fisher



A woman of Brittany

The people of different parts of France are very unlike one another. We can see, for instance, from the pictures of women of Provence and Normandy, that not only the costumes, but the types of faces in the **north and south are quite distinct. In Brittany the people speak a different language from the rest of France, more like the Welsh, and in fact a Welshman can partly understand a Breton when he is talking.**

The photographs on these pages are by Messrs. Mansell, Valentine, and the E. N. A.

pinafores, looking like large forget-me-nots themselves; through the cornfields and the orchards and the vineyards and the fine farms so carefully tended; past the villages and the castles, the towns and the grand cathedrals.

WHAT THE CHILDREN SEE FROM THE BOATS AS THEY SAIL ALONG

Truly, the families of the bargees can learn what is grown in France, what the people do in France, without looking in books. They see that wheat is grown nearly everywhere, for France produces in her great plains more than any other country, except the United States and Russia, and many thousands of men and women work in the fields to raise it, in the mills to grind it, in the barges and trains to carry it where it is needed. Still, there is not enough to feed all the people, and more must be brought from other countries.

The bargees, too, see much of the vineyards all along the courses of the Loire and the Garonne, and in the district east of Paris, called La Champagne. There are also great numbers of vineyards all along the Saône and the Rhone, and on the Mediterranean coast. France not only uses a great quantity of wine at home, for it is much cheaper than with us, but sends away all over the world many different kinds. Thousands of workers gather and press the grapes, make casks and bottles, and attend to all the various processes necessary before the wine is ready.

In the valley of the Rhone also grow mulberry-trees, which feed great numbers of silkworms, and so at Lyons and in the neighbourhood are many factories, which send out their famous silks, satins, ribbons, velvets, to every country where fine materials for clothes and furnishing are needed. The factories also get supplies of raw silk from Italy and from the East.

THE COALFIELDS AND THE FACTORIES THAT THEY FEED WITH POWER

Round the edge of the central highlands are several coalfields, the largest, St. Etienne, near Lyons, supplying the silk factories. As some iron and other metals are also found here and there about the same districts, there are various industries carried on, such as the making of tools and machinery. But the canals, and railway lines, too, lie thickest in the north-east of France, and many barges pass to and from the largest coalfield of the country, situated on the borders of Belgium. France only produces two-thirds of the coal needed in the country; the rest she buys from Great Britain, Germany, and the United States. She also has to buy iron and other metals needed at Lille, the chief town of a large district of tall chimneys and black smoke, with a deafening whiz and whir of machinery, and crowds of workers, all reminding us of our manufacturing centres at home. Here are iron and steel works, and linen and cotton factories. These industries are carried on all along the north-eastern frontier, Nancy and Belfort being particularly famed for cotton and metal works.

The raw cotton from America and other places comes to Le Havre, at the mouth of the Seine, which is often called the Liverpool of France, and from it are supplied Rouen, the Manchester of France, where there are many cotton factories, and also the rest of the cotton towns in the north and east.

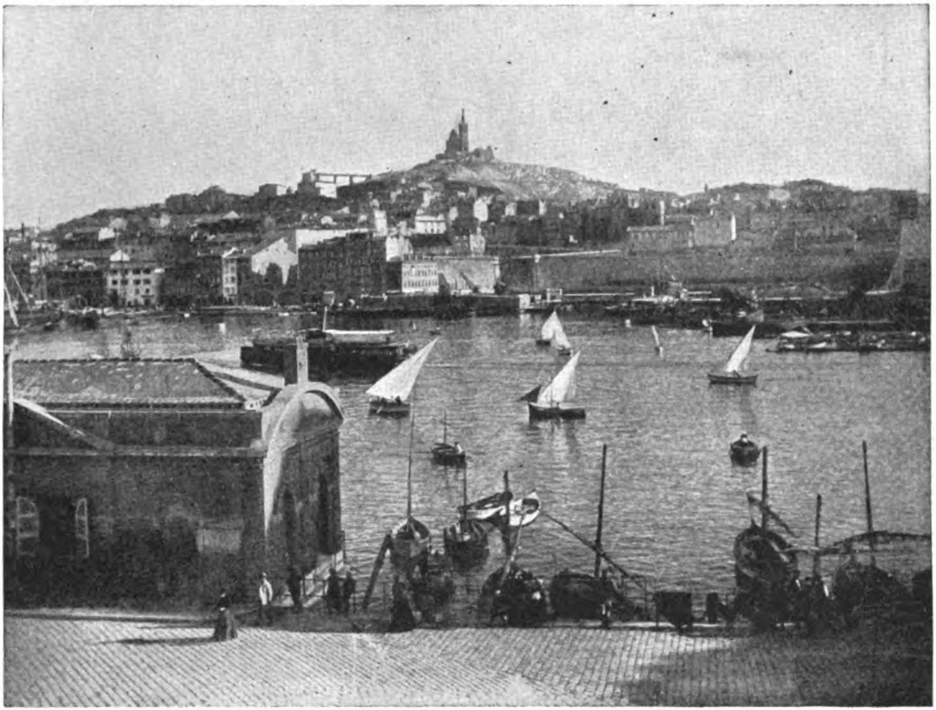
THE MAKING OF THE THINGS THAT FILL THE SHOP WINDOWS IN PARIS

The linen from these districts is made chiefly from flax grown in the fields of the north. Great quantities of the blue cotton and linen materials worn so much in France are made in these mills. To supplement the wool of the sheep grown on the Ardennes and in French pastures, supplies come by way of England from Australia and New Zealand, and from South America, to feed the various woollen factories of the north and east.

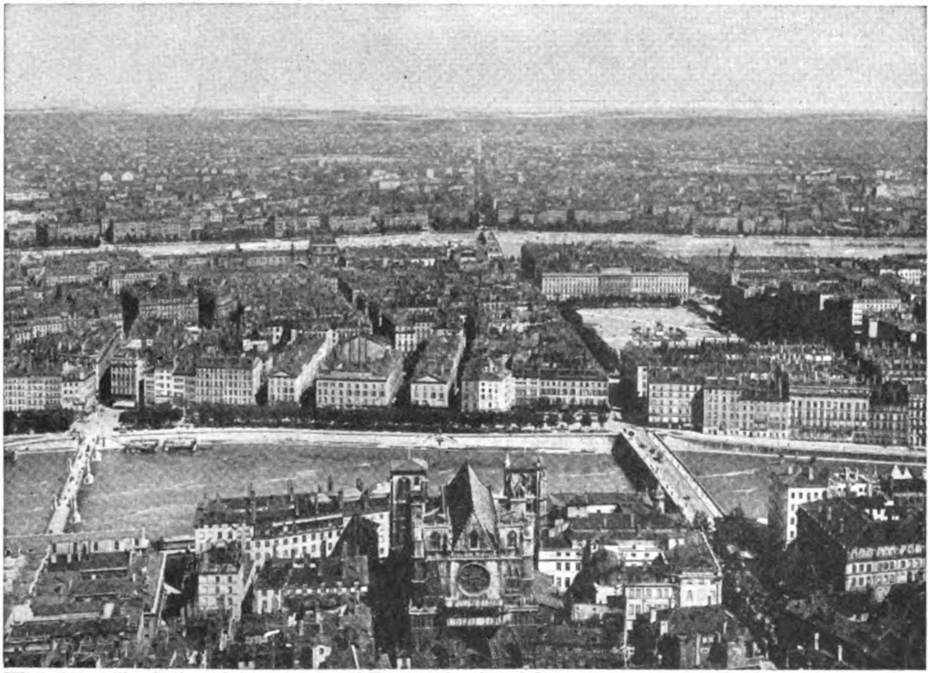
From the old decaying granite of the Massif Central comes kaolin, from which the finest china is made, though sometimes it is found easier to bring this special white clay up the Seine from the granite of Cornwall and Norway. At Sèvres, near Paris, and at Limoges, near Auvergne, most beautiful china is made. The French are particularly skilful in painting the shining surface. They also make very pretty peasant pottery, which costs about as many cents as the fine china does dollars.

But to see samples of the numberless things made in France, we must look into the shop windows of Paris. Thousands of other nations go to Paris—it takes only seven and a half hours from London—and everyone can find

TWO FAMOUS OLD CITIES OF FRANCE



The greatest commercial city of France is Marseilles, on the Mediterranean Sea, built on slopes overlooking the old harbour seen in this picture. Crowning the hill is the church of Notre Dame, which sailors are very fond of visiting. It was from Marseilles that bands of men and women marched to Paris and largely influenced the cause of the Revolution, as told on page 2272. Monte Cristo's Island lies a few miles off the Port of Marseilles.



While Marseilles is the third great city of France, the city of Lyons comes next to Paris, and is the second. Its great extent may be seen from this birdseye view. It is built where two rivers, the Rhone and the **Saône, meet, and the most important part of the city is on the narrow strip between these rivers.**

something of interest and delight in this splendid city. There are about half as many people in Paris as in London; the river running through the city is clean, and there are scarcely any fogs.

THE TREASURES OF PARIS AND THE PLEASURES OF ITS STREETS

Visitors who love history can find endless pleasure in wandering about the streets and squares, the bridges and palaces, where great events moved so quickly a hundred years ago. Those who love art can find splendid treasures in the museums and galleries. And as for the shops, besides the china. there is the wonderful and costly lace made in various parts of the country, the finest muslins and cambrics, the brocades and velvets from Lyons, the cloths from Amiens, the clocks and jewellery, of which a good deal is made in the neighbourhood of Paris, as well as the thousands of things that people buy for presents. Paris fashions in clothes are famed all the world over, and dressmakers and milliners come from other countries to find out what is going to be worn, and to copy the latest and smartest styles for their customers at home.

From this rich and beautiful city of Paris—one is apt to forget the great lines of fortifications round it, making it the largest fortified camp in the world—radiate not only the great roads of France, but nearly all the chief railway lines; for Paris is the very centre of the trade and industry of France, a sort of living heart, whose pulse-beats are felt to the farthest frontiers by means of the great arteries of roads, waterways, and railways. It takes now only about five hours to reach Lille and the busy district of which it is the centre, from Paris, and the lines pass on through Belgium and Germany to Holland, Austria, Russia. Another branch of the railway passes, through Amiens, where we may see the most perfect cathedral in France, to Boulogne and Calais.

THE RAILWAY FROM PARIS TO THE SEA, AND THE SHIPS AT MARSEILLES

The east of France down to the Mediterranean is served by the Paris - Lyons - Mediterranean Railway. The main line follows the old route through the Rhine valley, passing Lyons and Avignon, where the splendid palace of the Popes still speaks of the times when this city and its neighbourhood belonged to the Roman Church. Marseilles itself, the queen of the south, is a great world-port; every language is heard in its streets, from the sailors who bring ships there. Marseilles is one of the chief markets in France, and has factories for tile-making, soap, and oil. Through Marseilles passes French trade with the Far East, with the New World, with Africa, and, nearer still, steamers link it to the island of Corsica, about half the size of Wales, which passed to France from Italy the year before the birth of its greatest son, Napoleon Bonaparte.

Thousands of English people pass through Paris and Marseilles, not only on their way to Egypt and the East, but to spend the winter in the beautiful coast district between Marseilles and Italy—the Riviera. They leave fogs, snow, and bitter east winds behind in their own country, and in the course of a few hours—fourteen hours from Paris to Marseilles—pass to warm sunshine in a bright, clear air, under a blue sky, and can sit out of doors, facing the blue sea, enjoying the scent of roses and the sight of brilliant patches of geraniums, as well as the beauty of orange and lemon orchards and olive groves.

THE SPLENDOUR OF THE OLD TOWNS OF SOUTHERN FRANCE

Nice is one of the largest and most fashionable of the Riviera towns, and all nations of Europe gather here to find health and to amuse themselves. Fine scents and soaps come from this part of France and the best salad oil from olives.

The line of the south does not run to Paris, but connects the Atlantic with the Mediterranean, along the valley of the Garonne and its canals. There are towns in this part of France of surpassing interest. Toulouse is a splendid city of churches and mansions, with a museum and a fine library. It is at the meeting of the ways for commerce and industry of all kinds. Carcassonne is also on this line, and on the canal of the south; its strong walls still tell of its importance in the old days when it was the key to the narrow passage between the Massif Central and the Pyrenees. The wonderful cathedral of Albi, so lofty and grand, is but one among the great number of cathedrals found all over France, the undying glory of those who built them in the Middle Ages, and the delight of all who in later days love art and architecture.

To go from Cette, on the Mediterranean, to Bordeaux, the great wine port of the west, takes eleven hours of railway travelling, and lines branch off to many health resorts in the Pyrenees, and to Spain. Bordeaux is reached from Paris in about ten hours, passing Orleans, Tours—the garden of France—and Poitiers on the way.

Normandy and Brittany are served by the railway of the west. Cherbourg, the great naval and military port of the Channel, on the bold Cotentin peninsula, is reached in eight hours from Paris. Many German and English liners touch here on their way to and from America. Like Plymouth, it has a great breakwater to protect its harbour. Another naval and military port, Brest, on this line, at the extreme west of France, is five hours farther from Paris.

NORMANDY AND BRITTANY, AND THE GREAT SEAPORTS OF FRANCE

Le Havre, the second port in France, is about six hours from Paris by rail. The tall lighthouse above the town looks down on a busy scene of ships and docks, for the Seine is the great northern door into the country, and by it goods are taken to Rouen, and to distant Paris. We can see the cotton for the factories unloaded on the wharves of Rouen, under the shadow of the great churches for which it is so famous. And on the heights overlooking the windings of the "tranquil" river, in the fine, wide valley, stands the statue of Joan of Arc.

English people travel much in Normandy, which is so close to England; the seaside places are charming, and the long, tree-bordered roads are good for cycling. The cathedrals and churches are full of interest, and the apple orchards are a beautiful sight in their white spring dress. It is most interesting to watch the cider being made in the presses by the roadside in autumn. Over the wide-spreading valleys, in both Normandy and Picardy, grow fields of beetroot, so much used to make sugar; also great quantities of potatoes, largely sent to England. From Le Havre pass out millions of eggs, and tons of butter and cheese from the dairy farms of the north. A gay sight it is on market days in Normandy and Brittany, when the country folk crowd into the towns to buy and sell. Such pretty white caps and shining ornaments there are, such red and blue umbrellas, glowing brass pots full of milk, and such loud, animated talking. The serious-looking babies in close white caps seem the only quiet people.

THE CLATTER OF THE CHILDREN'S SHOES, AND THE BLUE SMOCKS AND BLOUSES

Perhaps the first morning you wake up in France you will wonder what causes that clatter, clatter, clatter over the stones. You look out and see merry little crowds of children, boys and girls, in blue smocks and blouses, the girls with hair very neatly plaited, all hastening to school, with their satchels on their backs. The clatter is from the wooden shoes, or sabots, that many of them wear. They are like the clogs of the Lancashire mill-workers, whose ancestors, it is said, got the pattern of the clogs from the French Huguenots, who did so much to help on the spinning and weaving in England when they left their native land for that country.

The French care a great deal about education, and have built fine schools all over the country. There are all sorts of schools, and all have an equal chance of getting the teaching their brains are best fitted to grasp. Every Frenchman over twenty-one shares in the government of his country; he has a voice in choosing the men who are to fill the important posts in his district and department, and to represent these again in the Chamber of Deputies—something like our House of Representatives—in Paris.

THE EIGHTY-SIX PARTS OF FRANCE AND THEIR MANY KINDS OF PEOPLE

So the greatest trouble is taken to teach the children to be good citizens, and to know their mother country well, her resources and her needs, and to understand what their brothers and sisters are doing in the eighty-six departments of France. Those departments were formed at the Revolution from the old provinces, so that the same fair laws and government should prevail equally all over the country. When we consider how wide is the country, of how many different provinces it is composed, how separated these different parts were till better government, education, and the railways drew them together, we shall find it easy to understand how it is that there are so many types of people and dialects in France. The men of Marseilles and Avignon could scarcely understand the men of Paris at the time of the Revolution; the peasants on the swampy marshes, called "Landes," near Bordeaux—those who walk about on stilts to keep out of the damp, and knit as they look after their flocks—are quite different from the keen, busy folk in the manufacturing districts of the north-east. The Bretons, bold sailor-men in beautiful Brittany, with its granite rocks and wave-bitten shores, are of the same stock as the Cornishmen and Welshmen, and speak a dialect which Welshmen can easily understand. Not so their fellow-countrymen on the other side of France, in the beautiful mountains of Savoy, near Grenoble, where Napoleon passed on his way from Elba, as we see on page 488.

These departments of Savoy and Nice have been added to France since Napoleon's time, and little could the young lieutenant at Toulon, a great naval station near Marseilles, have guessed at the expansion that was to begin about ten years after his death, across the Mediterranean.

WHY IT IS SAID THAT THE FUTURE OF FRANCE LIES IN AFRICA

We have seen how schemes of empire in the New World and in India faded away in the reign of Louis XV. France now holds but two small islands off Canada, two in the West Indies, and a strip of land on the continent of South America. In India proper there remain to France but a few isolated towns. In the peninsula to the east of India the French hold a territory larger than France—Indo-China—whence come all sorts of things grown in hot climates especially rice.

But "the future of France," it is said, "lies in Africa." Since 1830, when Algiers was first conquered, French power in that great continent has grown and spread till it governs an area seventeen times larger than France itself. Algiers is the land of sunshine and bright colours, to which many invalids needing warmth go to enjoy the clear air, and flowers and fruits such as are grown in South Europe. Rich iron-mines and quarries of fine marble are amongst its riches. The burning desert of Sahara separates the valuable northern states from West French Africa and the Soudan. South of these is the French Congo. From these large districts come dates, palm-oil, rubber, and ivory. On the other side of Africa France owns, besides some small colonies and islands, the large island of Madagascar, larger than France. It is rich in metals, and produces many useful things, such as coffee, sugar, cocoa.

THE LARGE COLONIES OF FRANCE & THE SMALL NUMBER OF FRENCHMEN THERE

The colonies of France, taken together, are as large as all Europe—about a third of the size of the British colonies and India; but the number of Frenchmen living in them is comparatively small. The French are not so ready to leave their homes and settle in a new land as the English, and, besides, France cannot spare them.

We have seen that France is almost twice as large as the United Kingdom, but fewer people live in it; there are about forty-two millions in the United Kingdom, and about thirty-nine millions in France. And the number of people in France does not increase year by year as in other countries.

France possesses a great deal to make it as flourishing a country as old Strabo foretold. Its people are clever, and a good education is within the reach of all. The country is rich, because it has a good government, and the people are thrifty, they work hard, and save. France is powerful because her people are both brave and polite.

WHAT FRANCE NEEDS MORE THAN ANYTHING ELSE IN THE WORLD

But what France wants more than anything else is more of these people—more babies; more troops of school children; more strong, clever young men and women, coming on, year after year, to join in the growing work of the motherland and her colonies. There are not enough people in France to do all this work, or to make the most of the beautiful country, with its advantages of sea-washed shores, mountain masses holding hidden treasures, navigable rivers spreading over fertile plains, besides all the other resources that have developed during the two thousand years since old Strabo wrote his Book of Countries.

The next story of Countries is on 2521.

A MERRY OLD ENGLISH BALLAD

A NUMBER of old English ballads have already appeared in our pages, and the following is a further example of these very old and once extremely popular stories in rhyme. Its proper title is "King John and the Abbot of Canterbury," but the tale which it tells is, of course, to be regarded entirely as fiction, as there are endless stories of a somewhat similar kind, in which three questions have to be answered, the last of the three seeming to be unanswerable. The way in which it is always possible to answer them serves to illustrate the resources of human ingenuity. The spelling of the words in this ballad has been modernised.

THE KING AND THE ABBOT

CONTINUED FROM 2295

An ancient story I'll tell you anon
Of a notable prince, that was called King John;
And he ruled England with main and with might,
For he did great wrong and maintain'd little right.

And I'll tell you a story so merry,
Concerning the Abbot of Canterbury;
How for his housekeeping and high renown,
They rode post for him to fair London town.

An hundred men, the King did hear say,
The Abbot kept in his house every day;
And fifty gold chains, without any doubt,
In velvet coats waited the Abbot about.

"How now, Father Abbot, I hear it of thee
Thou keepest a far better house than me;
And for thy housekeeping and high renown,
I fear thou work'st treason against my crown."

"My liege," quo' the Abbot, "I would it were known
I never spend nothing, but what is my own;
And I trust your Grace will do me no deer
For spending of my own true-gotten gear."

"Yes, yes, Father Abbot, thy fault it is high,
And now for the same thou needest must die;
For except thou canst answer me questions three.
Thy head shall be smitten from thy body.

"And first," quo' the King, "when I'm in this stead,
With my crown of gold so fair on my head,
Among all my liegemen so noble of birth,
Thou must tell me to one penny what I am worth.

"Secondly tell me, without any doubt,
How soon I may ride the whole world about.
And at the third question thou must not shrink,
But tell me here truly what I do think."

"Oh, these are hard questions for my shallow wit,
Nor I cannot answer your Grace as yet;
But if you will give me but three weeks' space,
I'll do my endeavour to answer your Grace."

"Now three weeks' space to thee I will give,
And that is the longest time thou hast to live;
For if thou dost not answer my questions three,
Thy lands and thy living are forfeit to me."

Away rode the Abbot all sad at that word,
And he rode to Cambridge, and Oxenford;
But never a doctor there was so wise,
That could with his learning an answer devise.

Then home rode the Abbot of comfort so cold,
And he met his shepherd a going to fold:
"How now, my lord Abbot, you are welcome home;
What news do you bring us from good King John?"

"Sad news, sad news, shepherd, I must give,
That I have but three days more to live;
For if I do not answer him questions three,
My head will be smitten from my body.

"The first is to tell him there in that stead,
With his crown of gold so fair on his head,
Among all his liegemen so noble of birth,
To within one penny of what he is worth.

"The second, to tell him, without any doubt,
How soon he may ride this whole world about;
And at the third question I must not shrink,
But tell him there truly what he does think."

"Now cheer up, Sir Abbot, did you never hear yet
That a fool he may learn a wise man wit?
Lend me horses, and serving men, and your apparel,
And I'll ride to London to answer your quarrel.

"Nay, frown not, if it hath been told unto me,
I am like your Lordship, as ever may be;
And if you will but lend me your gown,
There is none shall know us at fair London town."

"Now horses and serving men thou shalt have,
With sumptuous array most gallant and brave;
With crozier, and mitre, and rochet, and cope,
Fit to appear 'fore our father the Pope."

"Now welcome, Sir Abbot," the King he did say,
"'Tis well thou'rt come back to keep thy day:
For and if thou canst answer my questions three,
Thy life and thy living both saved shall be.

"And first, when thou see'st me here in this stead
With my crown of gold so fair on my head,
Among all my liegemen so noble of birth,
Tell me to one penny what I am worth."

"For thirty pence our Saviour was sold
Among the false Jews, as I have been told:
And twenty-nine is the worth of thee,
For I think thou art one penny worse than He."

The King he laughed, and swore by St. Rittel,
"I did not think I had been worth so little!
Now secondly, tell me, without any doubt,
How soon I may ride this whole world about."

"You must rise with the sun, and ride with the same,
Until the next morning he riseth again;
And then your Grace need not make any doubt,
But in twenty-four hours you'll ride it about."

The King he laughed, and swore by St. Jone,
"I did not think it could be done so soon!
Now, from the third question you must not shrink,
But tell me here truly what I do think."

"Yea, that shall I do, and make your Grace merry:
You think I'm the Abbot of Canterbury;
But I'm his poor shepherd, as plain you may see,
That am come to beg pardon for him and for me."

The King he laughed, and swore by the Mass,
"I'll make thee Lord Abbot this day in his place!"
"Now, nay, my liege, be not in such speed,
For alack, I can neither write nor read."

"Four nobles a week, then, I will give thee,
For this merry jest thou hast shown unto me;
And tell the old Abbot, when thou comest home,
Thou hast brought him a pardon from good King John."

MARY STUART'S FAREWELL

Mary Queen of Scots, one of the most romantic figures in English history, has been a favourite subject of the poets, and not only with British writers, but with French ones also, as her love of France, "Land of my girlhood's golden prime," was so great that her name is as familiar in French literature as in that of her own country. This poem, on the unfortunate queen's farewell to the land she loved, is from the French of Pierre Jean de Béranger, the greatest of French song-writers. See also the picture on page 847.

Farewell, farewell, thou beauteous clime,
Scene of so many a joy gone by!
Land of my girlhood's golden prime,
Farewell! to leave thee is to die!

Homeless, in thee I found a home,
From which I now afar must flee;
But tho' the alien shores I roam,
Ah, cease not to remember me!
The billows sweep the vessel's side,
The wind is waking o'er the main;
Ah, why will Heaven not turn the tide,
And give me back to thee again?

Farewell, farewell, thou beauteous clime,
Scene of so many a joy gone by!
Land of my girlhood's golden prime,
Farewell! to leave thee is to die!

When, lily-crown'd, thro' all the air
I heard thy people's plaudits ring,
Was it because a queen stood there,
Or Mary in her beauty's spring?
Of what avail to vaunt the sway
Of Caledonia's drear domain?
Her sceptre I'd resign for aye
To be one hour thy sovereign!

Farewell, farewell, thou beauteous clime,
Scene of so many a joy gone by!
Land of my girlhood's golden prime,
Farewell! to leave thee is to die!

'Mid Glory's glow, and Love's delight,
My days have passed in bliss supreme;
But yon bleak wilderness of blight,
Will all too soon dispel the dream!
With coming ill my heart is fraught,
Dread phantoms round my pillow flock;
Last night, awaiting me, methought
There loomed the scaffold and the block!

Farewell, farewell, thou beauteous clime,
Scene of so many a joy gone by!
Land of my girlhood's golden prime,
Farewell! to leave thee is to die!

Ah, France, my France, when doom draws near,
When woe-begirt I end my days,
To thee who now my sobs dost hear,
To thee I'll turn my weeping gaze!
Slowly the shore recedes from sight,
Out o'er the surf my bark is tost,
And in the deepening gloom of night
The last faint glimpse of thee is lost!

Farewell, farewell, thou beauteous clime,
Scene of so many a joy gone by!
Land of my girlhood's golden prime,
Farewell! to leave thee is to die!

THE IRISH HARPER

Thomas Campbell has in these favourite verses given us a pathetic and beautiful picture of the faithful friendship of a dog for his poor but kind master. It is no wonder that poets delight to praise the dog, whose friendship for its master is never affected by the worldly position of the latter.

On the green banks of Shannon, when Sheelah was nigh,
No blithe Irish lad was so happy as I;
No harp like my own could so cheerily play,
And wherever I went was my poor dog Tray.

When at last I was forced from my Sheelah to part,
She said—while the sorrow was big at her heart:
"Oh! remember your Sheelah, when far, far away,
And be kind, my dear Pat, to our poor dog Tray."

Poor dog! he was faithful, and kind, to be sure,
And he constantly loved me, although I was poor;
When the sour-looking folks sent me heartless away,
I had always a friend in my poor dog Tray.

When the road was so dark, and the night was so cold,
And Pat and his dog were grown weary and old,
How snugly we slept in my old coat of grey,
And he licked me for kindness—my poor dog Tray.

Though my wallet was scant, I remembered his case,
Nor refused my last crust to his pitiful face;
But he died at my feet one cold winter's day,
And I played a sad lament for my poor dog Tray.

Where now shall I go, poor, forsaken, and blind?
Can I find one to guide me, so faithful and kind?
To my sweet native village, so far, far away,
I can never more return with my poor dog Tray.

THE STREAM AND THE OCEAN

Victor Hugo was one of the great poets and novelists of France. Most of his stories have been translated into English, but not all his poems. These short verses have not the grand roll and the passion of his great poems, as those would not suit the subject he has here chosen; but they make a charming little poem, which has been specially translated into English for our book by Mr. Harold Begbie.

The streamlet down from the mountainous glen
Fell drop by drop to the roaring sea;
And the ocean, strewn with the wrecks of men,
Cried: "Whimperer, what dost thou want with me?

"Lo, I am the terror that none may fence,
I drive to the edge of the sky my way;
And can I, who am terrible, strong, immense,
Have need of thy trickles of dew and spray?"

Then the streamlet answered the ocean back:
"O bitter sea, to your furious brink,
Without glory or noise, I give what you lack—
A drop of water that men can drink."

THE IVY GREEN

Charles Dickens we all know as one of the greatest English novelists, but hardly at all as a poet. He was not a poet of any note, however, and wrote very little verse. The poem that follows is at least of interest as it was written by him, whose name is so famous and so deservedly revered.

Oh, a dainty plant is the ivy green,
That creepeth o'er ruins old!
Of right choice food are his meals, I ween,
In his cell so lone and cold.
The wall must be crumbled, the stone decayed,
To pleasure his dainty whim;
And the mouldering dust that years have made
Is a merry meal for him.
Creeping where no life is seen,
A rare old plant is the ivy green.

Fast he stealeth on, though he wears no wings,
And a staunch old heart has he.
How closely he twineth, how tight he clings,
To his friend, the huge oak-tree!
And slily he traileth along the ground,
And his leaves he gently waves,
As he joyously hugs and crawleth round
The rich mould of dead men's graves.
Creeping where grim death has been,
A rare old plant is the ivy green.

Whole ages have fled, and their works decayed,
And nations have scattered been;
But the stout old ivy shall never fade
From its hale and hearty green.
The brave old plant in its lonely days
Shall fatten upon the past;
For the stateliest building man can raise
Is the ivy's food at last.
Creeping on, where time has been,
A rare old plant is the ivy green.

A FOREST HYMN

The groves were God's first temples. Ere man learned
To hew the shaft, and lay the architrave,
And spread the roof above them—ere he framed
The lofty vault, to gather and roll back
The sound of anthems; in the darkling wood,
Amid the cool and silence, he knelt down,
And offered to the Mightiest solemn thanks
And supplication. For his simple heart
Might not resist the sacred influence
Which, from the stilly twilight of the place,
And from the gray old trunks that high in heaven
Mingled their mossy boughs, and from the sound
Of the invisible breath that swayed at once
All their green tops, stole over him, and bowed
His spirit with the thought of boundless power
And inaccessible majesty. Ah, why
Should we, in the world's riper years, neglect
God's ancient sanctuaries, and adore
Only among the crowd, and under roofs
That our frail hands have raised? Let me, at least,
Here in the shadow of this aged wood,
Offer one hymn—thrice happy, if it find
Acceptance in His ear.

— William Cullen Bryant.

THE RAVEN AND THE OAK

This strange poem by S. T. Coleridge, the author of "The Ancient Mariner," attributes to the raven those characteristics of evil omen which we are apt to associate with his black coat and the unpleasant croaking of his voice.

UNDERNEATH an old oak-tree
There was of swine a huge company,
That grunted as they crunch'd the mast;
For that was ripe and fell full fast.
Then they trotted away, for the wind it grew high ;
One acorn they left, and no more might you spy.
Next came a Raven that liked not such folly ;
He belonged, they did say, to the witch Melancholy !
Blacker was he than blackest jet,
Flew low in the rain and his feathers not wet.
He picked up the acorn and buried it straight
By the side of a river both deep and great.

Where then did the Raven go ?
He went high and low,
Over hill, over dale, did the black Raven go.
Many autumns, many springs
Travelled he with wandering wings ;
Many summers, many winters—
I can't tell half his adventures.

At length he came back, and with him a she,
And the acorn was grown to a tall oak-tree.
They built them a nest in the topmost bough,
And young ones they had and were happy enow.
But soon came a woodman in leathern guise,
His brow, like a pent house, hung over his eyes.
He'd an axe in his hand, not a word he spoke,
But with many a hem ! and a sturdy stroke,
At length he brought down the poor Raven's old oak.
His young ones were killed, for they could not depart,
And their mother did die of a broken heart.
The boughs from the trunk the woodman did sever ;
And they floated it down on the course of the river.
They sawed it in planks, and its bark they did strip,
And with this tree and others they made a good ship.
The ship it was launched ; but in sight of the land
Such a storm there did rise as no ship could withstand.
It bulged on a rock, and the waves rushed in fast ;
Round and round flew the Raven and cawed to the blast.
He heard the last shriek of the perishing souls—
See, see, o'er the top-mast the mad water rolls !
Right glad was the Raven, and off he went fleet,
And Death riding home on a cloud he did meet,
And he thanked him again and again for this treat ;
They had taken his all, and revenge it was sweet.

THE BLUE AND THE GRAY

BY the flow of the inland river,
Whence the fleets of iron have fled,
Where the blades of the grave-grass quiver,
Asleep are the ranks of the dead:
Under the sod and the dew,
Waiting the judgment-day;
Under the one, the Blue,
Under the other, the Gray.

These in the robings of glory,
Those in the gloom of defeat,
All with the battle-blood gory,
In the dusk of eternity meet:
Under the sod and the dew,
Waiting the judgment-day;
Under the laurel, the Blue,
Under the willow, the Gray.

From the silence of sorrowful hours
The desolate mourners go,
Lovingly laden with flowers
Alike for the friend and the foe
Under the sod and the dew,
Waiting the judgment-day;
Under the roses, the Blue,
Under the lilies, the Gray,

So with an equal splendour,
The morning sun-rays fall,
With a touch impartially tender,
On the blossoms blooming for all:
Under the sod and the dew,
Waiting the judgment-day;
Broidered with gold, the Blue,
Mellowed with gold, the Gray.

So, when the summer calleth,
On forest and field of grain,
With an equal murmur falleth
The cooling drip of the rain:
Under the sod and the dew,
Waiting the judgment-day;
Wet with the rain, the Blue,
Wet with the rain, the Gray.

Sadly, but not with upbraiding,
The generous deed was done,
In the storm of the years that are fading
No braver battle was won:
Under the sod and the dew,
Waiting the judgment-day;
Under the blossoms, the Blue,
Under the garlands, the Gray.

No more shall the war cry sever,
Or the winding rivers be red;
They banish our anger for ever
When they laurel the graves of our dead!
Under the sod and the dew,
Waiting the judgment-day;
Love and tears for the Blue,
Tears and love for the Gray.

FRANCIS MILES FINCH.

LITTLE VERSES FOR VERY LITTLE PEOPLE

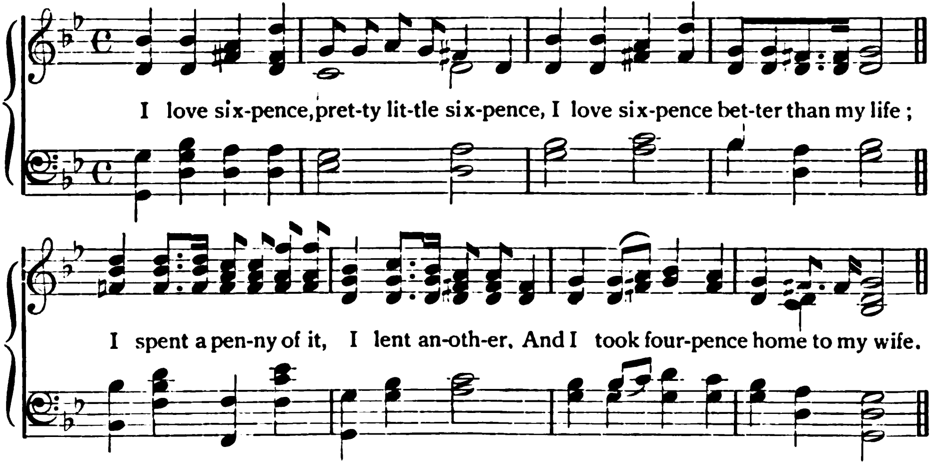
“Jacky, come give me thy fiddle
If ever thou mean to thrive.”
“Nay; I’ll not give my fiddle
To any man alive.

“If I should give my fiddle,
They’ll think that I’m gone mad,
For many a joyful day
My fiddle and I have had.”

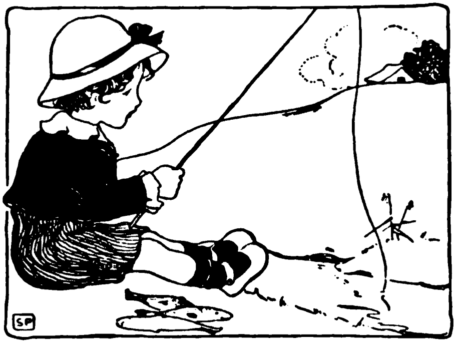
If wishes were horses,
Beggars would ride;
If turnips were watches,
I would wear one by my side.

Robin the Bobbin, the big, greedy Ben,
He ate more meat than fourscore men;
He ate a cow, he ate a calf,
He ate a butcher and a half;
He ate a church, he ate a steeple,
He ate the priest and all the people!
A cow and a calf,
An ox and a half,
A church and a steeple,
And all the good people,
And yet he complained he was hungry.

I LOVE SIXPENCE


I love six-pence, pret-ty lit-tle six-pence, I love six-pence bet-ter than my life;
I spent a pen-ny of it, I lent an-oth-er, And I took four-pence home to my wife.

As I was going by Charing Cross,
I saw a black man upon a black horse;
They told me it was King Charles the First;
Oh, dear! my heart was ready to burst.

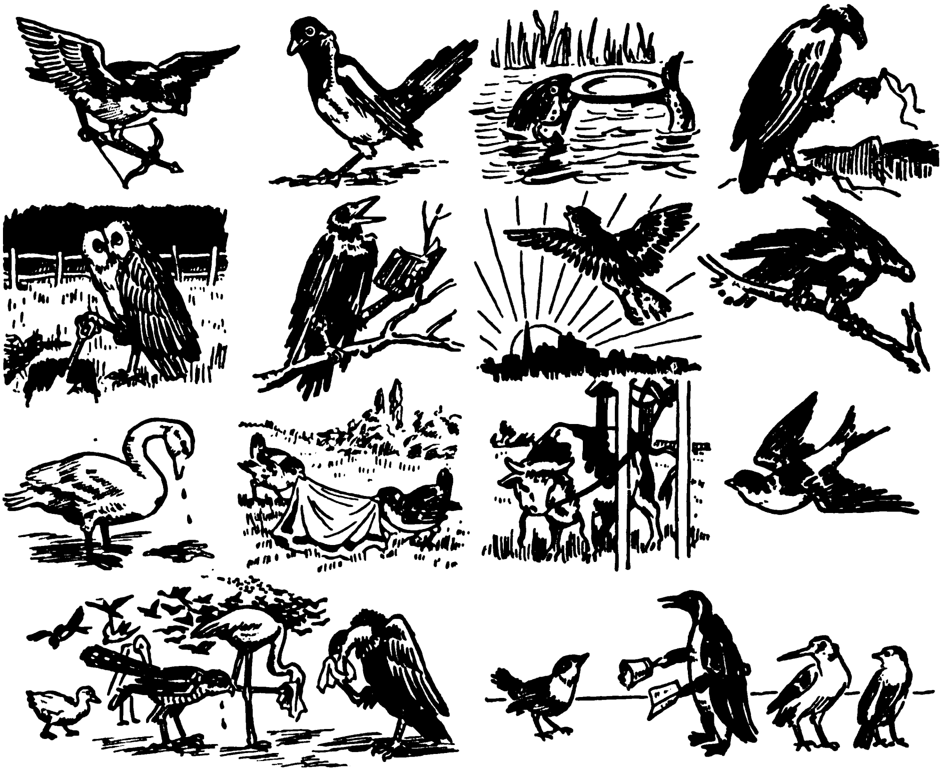


Little Tommy Tittlemouse
Lived in a little house;
He caught fishes
In other men’s ditches.

If you sneeze on Monday, you sneeze for danger;
Sneeze on a Tuesday, kiss a stranger;
Sneeze on Wednesday, sneeze for a letter;
Sneeze on a Thursday, something better;
Sneeze on a Friday, sneeze for sorrow;
Sneeze on a Saturday, see your sweetheart to-morrow.

Cold and raw the north wind doth blow,
Bleak in a morning early;
All the hills are covered with snow,
And winter’s now come fairly.

Doctor Foster went to Glo’ster,
In a shower of rain;
He stepped in a puddle, up to his middle,
And never went there again.



WHO KILLED COCK ROBIN?

Who killed Cock Robin?
  I, said the Sparrow,
  With my bow and arrow,
I killed Cock Robin.

Who saw him die?
  I, said the Magpie,
  With my little eye,
I saw him die.

Who caught his blood?
  I, said the Fish,
  With my little dish,
I caught his blood.

Who made his shroud?
  I, said the Eagle,
  With my thread and needle.
I made his shroud.

Who'll dig his grave?
  The Owl, with aid
  Of mattock and spade,
Will dig Robin's grave.

Who'll be the parson?
  I, said the Rook,
  With my little book,
I'll be the parson.

Who'll be the clerk?
  I, said the Lark,
  If not in the dark,
I'll be the clerk.

Who'll carry him to the grave?
  I, said the Kite,
  If not in the night,
I'll carry him to the grave.

Who'll be chief mourner?
  I, said the Swan,
  I'm sorry he's gone,
I'll be chief mourner.

Who'll bear his pall?
  We, said the Wren,
  Both the cock and the hen,
We'll bear the pall.

Who'll toll the bell?
  I, said the Bull,
  Because I can pull,
And I'll toll the bell.

Who'll lead the way?
  I, said the Martin,
  When ready for starting,
And I'll lead the way.

All the birds in the air
  Began sighing and sobbing
When they heard the bell toll
  For poor Cock Robin.

To all it concerns,
  This notice apprises,
The Sparrow's for trial
  At next bird assizes.

TOM, TOM, THE PIPER'S SON

Tom he was the piper's son,
He learn'd to play when he was young,
But the only tune that he could play
Was, "Over the hills and far away."

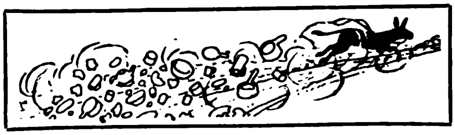
Now Tom with his pipe made such a noise,
That he pleased both the girls and the boys,
And they stopp'd to hear him play,
"Over the hills and far away."

Tom with his pipe did play with such skill,
That those who heard him could never keep still;
Whenever they heard they began for to dance,
Even pigs on their hind legs would after him prance.

As Dolly was milking her cow one day,
Tom took out his pipe and began for to play;
So Dolly and the cow danced "The Cheshire round,"
Till the pail was broke and the milk ran on the ground.

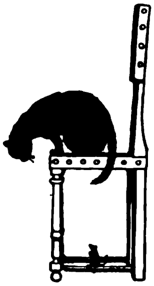
He met old Dame Trot with a basket of eggs.
He used his pipe and she used her legs;
She danced about till the eggs were all broke,
She began for to fret, but he laughed at the joke.

He saw a cross fellow was beating an ass,
Heavy laden with pots, pans, dishes, and glass;
He took out his pipe and played them a tune,
And the jackass's load was lightened full soon.



Solomon Grundy,
Born on a Monday,
Christened on Tuesday,
Married on Wednesday,
Took ill on Thursday,
Worse on Friday,
Died on Saturday,
Buried on Sunday,
This is the end of
Solomon Grundy.

Pussy cat, pussy cat, where have you been?
I've been to London to look at the Queen.
Pussy cat, pussy cat, what did you there?
I frightened a little mouse under the chair.



I had a little pony,
His name was Dapple Gray,
I sent him to a lady,
To ride a mile away.

She whipped him, she slashed him,
She rode him through the mire;
I would not lend my pony now
For the lady's hire.

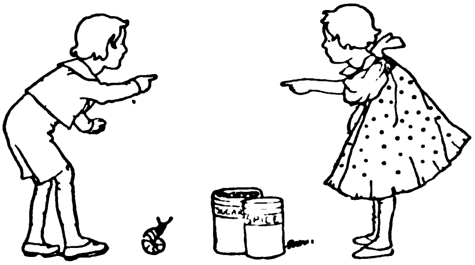
Poor old Robinson Crusoe!
Poor old Robinson Crusoe!
They made him a coat
Of an old nanny goat,
I wonder how they could do so!
With a ring a ting tang,
And a ring a ting tang,
Poor old Robinson Crusoe!

Three wise men of Gotham
Went to sea in a bowl:
And if the bowl had been stronger
My song would have been longer.

I'll tell you a story,
About Jack a Nory—
And now my story's begun:
I'll tell you another
About Jack and his brother—
And now my story's done.

Pussy-cat Mole
Jumped over a coal,
And in her best petticoat burnt a great hole.
Poor Pussy's weeping—she'll have no more milk
Until her best petticoat's mended with silk.

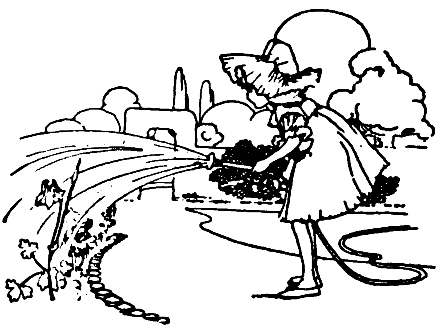
What are little boys made of, made of,
What are little boys made of?
Snaps and snails, and puppy-dogs' tails;
And that's what little boys are made of, made of.



What are little girls made of, made of,
What are little girls made of?
Sugar and spice, and all that's nice;
And that's what little girls are made of, made of.

There was an old woman, and what do you think?
She lived upon nothing but victuals and drink:
Victuals and drink were the chief of her diet;
This tiresome old woman could never be quiet.

She went to the baker to buy her some bread,
And when she came home her old husband was dead;
She went to the clerk to toll the bell,
And when she came back her old husband was well.



Mary, Mary, quite contrary,
How does your garden grow?
With cockle-shells and silver bells
And columbines all of a row.

READING

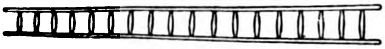
MAKING NEW WORDS FROM OLD ONES

CONTINUED FROM 2176

It is a long time since we had a really proper reading lesson, so we had better have one now, something like the lessons which we had at the beginning, only harder; for, of course, we are getting on splendidly now, and do not want words that are too easy.

It is interesting to take a word of two syllables—like AD-DER—and see how many words you can make of it by putting letters on in front, like this:

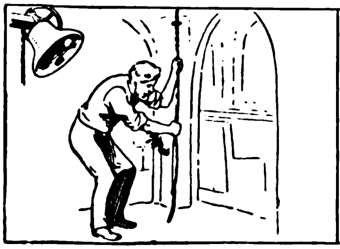
ADDER



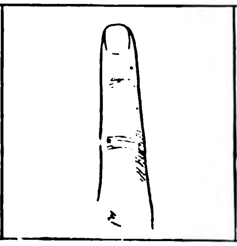
LADDER

BLADDER

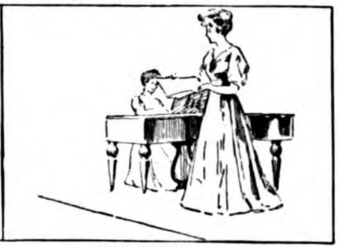
Then take the two syllables IN-GER. They do not make a word by themselves, but suppose we try them in this way to see what we get:



RINGER

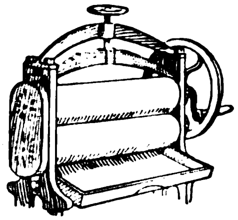


FINGER



SINGER

Then try putting another letter in, and we shall get these words:



WRINGER

FLINGER

SLINGER

WRINGER—a mangle. FLINGER—a man who flings or throws something.

SLINGER—David was a slinger, when he put a stone in his sling and killed Goliath with it. We all know the story quite well.

Just look at those words again carefully.

What is a Ringer? A person who rings.

What is a Singer? A person who sings.

What is a Flinger? A person who flings.

What is a Slinger? A person who slings.

So we learn from this that if we add the letters ER on to a word that means to do something, we make a new word that means the person who does it. Let us see if this is true in other words:

If you BUY marbles, you are a BUYER.

If you SELL them, you are a SELLER.

If you OWN silk-worms, you are an OWNER.

If you LEND money, you are a LENDER.

If you READ this, you are a READER (and quite a good one, too).

Now for two or three longer words, with three syllables; we have not had such long words yet, but there is no need to be frightened.

If you GARDEN, you are a GARDENER.

If you play CRICKET. you are a CRICKETER.

If you play FOOTBALL, you are a FOOTBALLER.

To close this lesson, I should like you to learn these lines. They are better than nursery rhymes, and there are no hard words in them:

When in the morning we arise,
What beauty meets our opening eyes!
We learn from flowers and sunny skies:
That God is Love!

As all day long we go our way
In school, or playground, work or play,
How all around us seems to say:
That God is Love!

When comes the darkness of the night
We have no fear, we feel no fright;
The stars above are shining bright:
And God is Love!

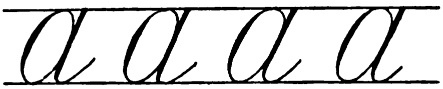
So through all time, and all life long,
For young or aged, weak or strong,
This is the great eternal song:
Our God is Love!

WRITING

LEARNING TO WRITE CAPITAL LETTERS

When next Tom and Nora brought paper and pencils for their mother to show them how to write the capital letters, Nora asked if there were any more capital letters like small ones, for both Tom and she found them so easy to write.

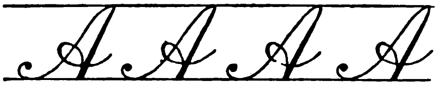
"Here is one which is quite an old friend," said her mother, as she wrote A like this:



"You will both write that easily," she then said. "Some of the capital letters are written in two different ways. A is one of them."

"May we learn the other way, too?" asked Tom. "Perhaps one is nicer than the other."

"You shall see," his mother replied, as she wrote some other A's like this:

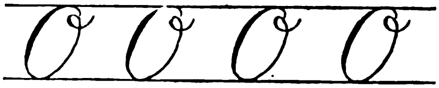


"This A starts with Tom's little curled spring near the lower line, and makes a long up-stroke to the right double the height between the lines, and then comes down to the lower line with a thick down-stroke, and makes one of Nora's pretty loops over the up-stroke."

"Like tying a bow," added Nora. "Mother, the first A is the easiest to make, but this A is a pretty letter."

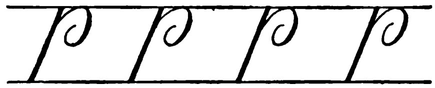
"So it is," said her mother; "and no one could mistake it for a small a."

When Tom and Nora had written both A's, they were shown how to make capital O, like this:



"That is an oval, mother, like small o!" exclaimed Tom, who remembered the hat and the dish; "but it does not end in the same way."

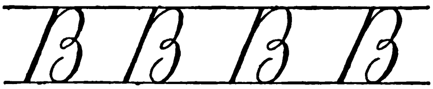
"No," said Nora; "it tries to tie itself in a knot at the finish." And she and Tom busily set to work to make O's that tried to tie themselves into knots. When they had written them, their mother said, "This is P:"



"See, the pencil makes a long down-stroke, then returns up over the down-stroke and out to the right, with a big curve about half the distance of the stroke, and ends in the middle of the curve."

The down-stroke and up-stroke were quite easy, but the curve had to be tried two or three times before it could be written well. Tom tried to think of the first part of X uncurled, and Nora thought of capital O, but starting on the left and untied.

"P will help us to make B," their mother told them when they had finished it. "Here is B:"



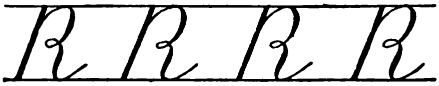
"B is just like P until we get near the end of the curve; then the pencil turns round to the right, makes a small loop, and ends with another curve touching the bottom line."

"It seems as though B had grown out of P, like j from i," said Nora, while she was copying her mother's letter.

"I think not, Nora; but they are near relatives. We use our lips to make them both. Watch mine while I say P, B."

Nora tried saying P, B, then Pay, Bay, and understood how her lips made both P and B.

"The last letter we are going to make to-day is something like B," their mother told the children as she wrote some letters. "It is R. What do you think of it?"



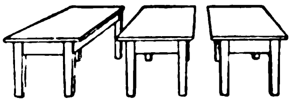
Both the children saw how much it was like B. It started with the same long down-stroke and up-stroke as P and B, and the first large curve to the right was the same. The loop in the middle was like the loop of B, but the last curve went round to the right instead of to the left as in B, and opened outwards.

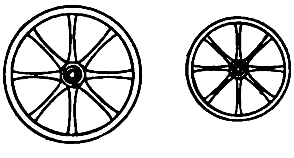
"If we notice the difference between P, B, and R very carefully now," their mother said, "they will give us no trouble in the future, and will be easy to remember. Three little brothers—Percy, the youngest; Bertie, the middle one; and Roy the eldest."

ARITHMETIC

HOW TO MULTIPLY NUMBERS

Here are three tables, each with 4 legs. How many legs are there altogether? To find the answer to the question we must add together 4 and 4 and 4, which tells us there are 12 legs altogether. Now, instead of saying 4 and 4 and 4 make 12, it is simpler to speak of "three fours," and say "three fours are twelve."





Again, if the front wheel of a carriage has 8 spokes, and the back wheel also has 8 spokes, how many spokes are there in the two wheels together?

By adding together 8 and 8, we find the answer is 16. And, in just the same way as before, we say, instead of 8 and 8, "twice eight" make 16.

In each of the above examples we had to repeat a given number a certain number of times, and then add them together. If we had worked the examples on paper we should have had to arrange them like these.

$$\begin{array}{r}4\\4\\\underline{4}\\12\end{array}\quad\text{and}\quad\begin{array}{r}8\\\underline{8}\\16\end{array}$$

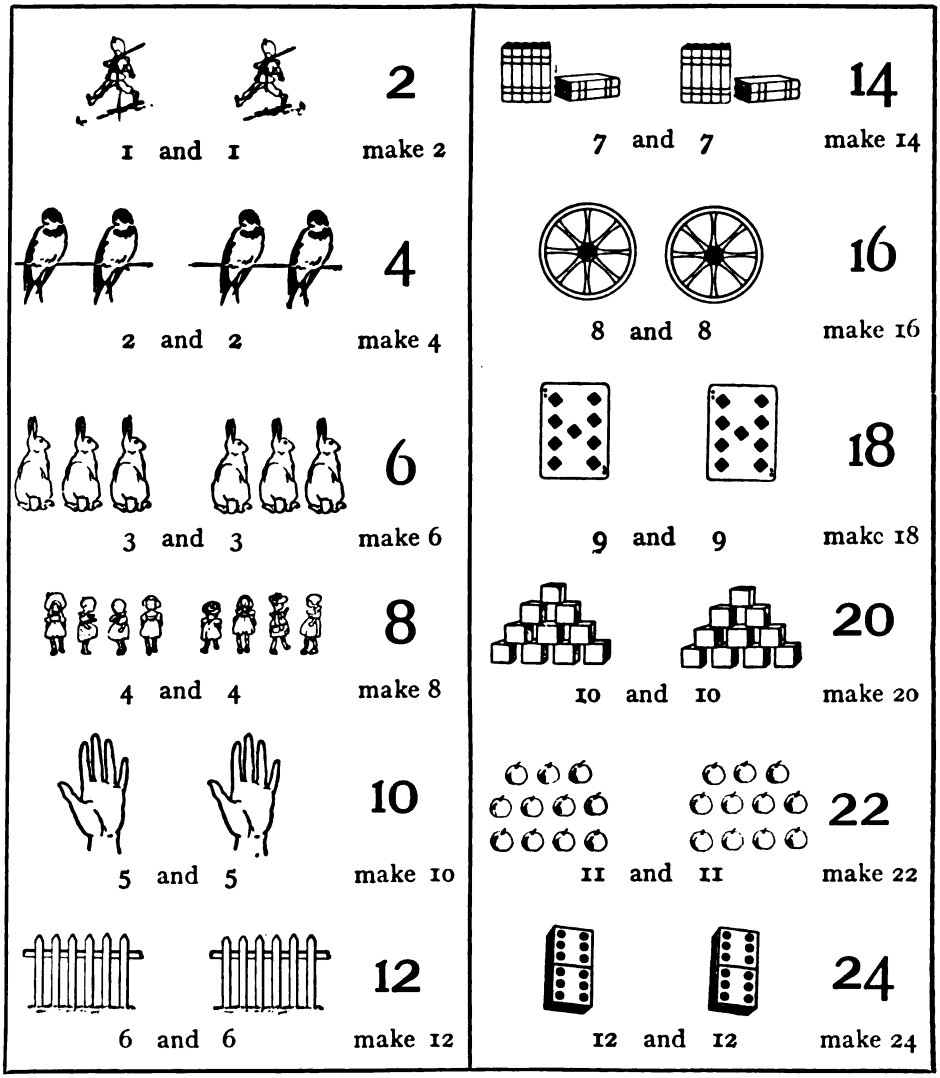
This process of adding together repetitions of a given number is called *multiplication.* If we write the number three times and do the addition, we say that we have "multiplied that number by 3." If we write the number twice and add, we "multiply the number by 2."

By adding 8 spokes of one wheel to 8 spokes of another, we found that "twice 8 make 16." In the same sort of way we can find how much twice any other number makes.

Suppose we begin with "twice one," and go on as far as "twice twelve."

On this page are twelve sets of pictures, each set containing two groups of objects. By counting the objects in any set of pictures, we find how many "twice the number in any group" makes. For example, in the fourth picture we have two groups of children. Counting the children in the first group, we say "one, two, three, four"; then going to the second group we say "five, six, seven, eight." So we get the result "4 and 4 are 8."

Under each picture is written the answer to the addition sum. But, as we saw at the beginning of the lesson, we call "1 and 1" "twice one"; "2 and 2" we call "twice two," and



so on. If we write down all these results in a column we have:

Twice	*Twice*
1 are 2	7 are 14
2 are 4	8 are 16
3 are 6	9 are 18
4 are 8	10 are 20
5 are 10	11 are 22
6 are 12	12 are 24

This forms what is called a *table*, which means simply a list of results. We must learn this "2 times" table by heart. Of course, the word "twice" (which is only written at the top of the table) must be repeated in every line; so that we say "twice 1 are 2; twice 2 are 4; twice 3 are 6," and so on.

When we know the table perfectly, so that we can answer such a question as: "How many do 7 and 7 make?" quickly and without having to think too long about it, we can go on to the "3 times" table.

To make the table, write down the numbers from 1 to 12 in a column. Next, by the side of this column write down the results of the "2 times" table—that is, say to yourself "twice 1 are 2," and put the 2 down by the side of the 1 in the first column. Then say "twice 2 are 4," and put the 4 down by the 2 in the first column, and so on.

1	2	3	7	14	21
2	4	6	8	16	24
3	6	9	9	18	27
4	8	12	10	20	30
5	10	15	11	22	33
6	12	18	12	24	36

Now add together the two figures which come in each line. 1 and 2 make 3. Put the 3 down at the top of a third column. Next, 2 and 4 make 6. Put the 6 down under the 3 you have just written. Going on in this way, we get in the third column the figures 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36.

3 *times*	3 *times*
1 are 3	7 are 21
2 are 6	8 are 24
3 are 9	9 are 27
4 are 12	10 are 30
5 are 15	11 are 33
6 are 18	12 are 36

These are the results in the "3 times" table. We can write it out and learn it in the way we did the "2 times."

ANSWERS TO EXAMPLES ON PAGE 2172.

1	2	3
26002	37259	77951
437	4023	3141
5340	584361	203
78	294	5925
904		64
32761	625937	87284

MUSIC

THE HOMES OF THE LITTLE GOBLINS

We have talked about the fairies a very great deal, but are you not wondering what the little goblins are doing? In the very first talk we had together we opened our magic kingdom, the piano, and saw a long black line and a long white line. Very quickly we discovered that the white line consists of about fifty little white pieces, where the fairies dwell, and if you have good memories you will remember that we found the black line to be made up of thirty-five little black houses, arranged in twos and threes, and in each little black house a goblin dwells.

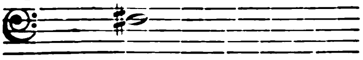
Such good-hearted little goblins they are! They are always ready to help the pretty fairies; and wonderful friends they prove themselves to be.

The fairies have their houses so close to the goblins' that it is quite easy for one to help the other. Supposing Fairy F wants to go out for a little while, it might be very difficult for her to do so, because in our magic kingdom no one is ever refused. Fairies always answer truly and sweetly if only we approach their notes carefully. This being so, we can quite well see that the fairies would think it a grave breach of good manners if anyone called on Fairy F and no answer came. So what can the little fairies do when they want to have a little holiday?

The secret was whispered in the world a long time ago; it travelled down the ages to me, and now I will tell it to you. The fairy goes to the little black note next door to her, on the right-hand side; she tells the little goblin who lives there how very much she wants a holiday, and asks him if he will be so very kind as to answer any visitors who call. The little goblin smiles, and tells her how happy he is to be able to help her. "Thank you, dear goblin," replies the little fairy. "I shall lend you my name for all the time I am away, and you must carry a flag which I now give to you. It is known as the little *sharp*. Everyone knows that it is the sign carried by a kind little goblin who is keeping house for the wee fairy immediately next door to him, on his left-hand side. And because your voice is just a very little higher than mine, and you take my place so sharply, I will give you my name."

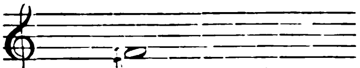
Very proud is the little goblin that he can really help the fairy; very happy is the fairy because she has so kind a friend. You and I will go to Fairy F's note on the fourth line in the Bass Road, and we shall find her little goblin hanging the small flag on the same fourth line. So, instead of pressing little F's white note, we shall go to the black note immediately above her on the right-hand side.

Little Goblin A♯



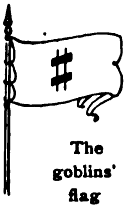
Little Goblin F♯

Now we will pay a visit to Fairy F's note between the first and second lines in the Treble Road, to find Goblin F-sharp on her right:



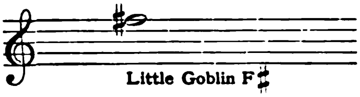
Little Goblin F♯

but, if you notice as quickly as I am sure you will, you will see that while he lives on the right-hand side, when the photograph is taken his banner appears on the left side. It is one of those funny things that happen in fairyland, and one which we must be wide awake enough never to forget.



The goblins' flag

Once again we must find Fairy F's note on the fifth line in the Treble Road, and, sure enough, there is the dear friendly little goblin on her right.



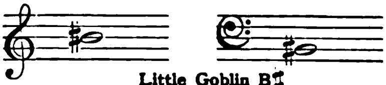
Little Goblin F♯

Wherever Fairy F has a home, there on the right is little Goblin F-sharp ready to sing for her, whenever she wants his bright little voice, but we must always remember that his voice is a little higher, or *sharper*, than the voice of the fairy he is representing.

Has Fairy C a little C-sharp goblin, too? Certainly she has. We will find all the little notes belonging to her, and at the right-hand side of each one we shall see there is a wee goblin's house, and know that good, kind Goblin C-sharp is ready and waiting to help. Fairy G's little goblin lives exactly next door on her right; Fairy D is as happy as can be, because her goblin, D-sharp, is immediately next to her, and for the same reason Fairy A feels quite safe, knowing she can have a holiday when she wants one, for her little goblin, A-sharp, is ready to unfurl his banner and sing.

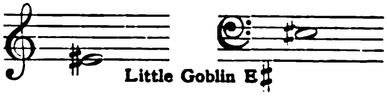
You will be surprised to know that Fairy B and Fairy E have no little goblin living immediately on their right. Look on the piano, and you will see that, as Fairy B's house joins Fairy C's, there is no room for a little black house, and Fairy E is in the same fix, for her house is the very next to Fairy F's, so what can these poor fairies do when they want a holiday?

Well, as we know, in this magic land everyone tries to be kind to everyone else, and so Fairy C comes to poor little Fairy B, and says, "If you will give me the little sharp flag, and let me bear your name, I will quite forget myself as long as you need me, and during that time everyone will call me "little B-sharp."



Little Goblin B♯

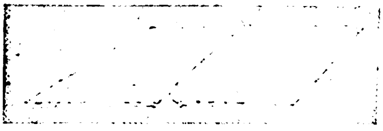
The same kind offer was made to little E by Fairy F, and she, too, forgets herself, takes Fairy E's place, and carries little E-sharp's banner.



Little Goblin E♯

HOW TO DRAW AN OPEN BOOK

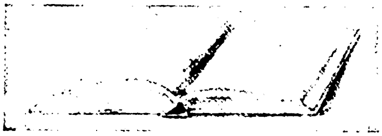
By this time we know quite well how to draw easy things in black and white chalk. An open book is not an easy thing, but it is interesting, and we can learn now to draw it in chalk or in pencil—or with both if we like. We must have white drawing-paper and our pencils ready, in any case, because there are some things to learn for which we shall want to make some little pencil sketches first.



The dotted lines show us how to begin the book. Then the other lines may be filled in.

We have learnt how things alter their shape when they are moved nearer to or further from the eye, but there is still more for us to know about this. If we keep our heads quite straight, and our eyes, too, and look at the wall exactly opposite us, there will be a point on the wall on a level with our eyes, and we can only see a small distance all round this point, so that some things on the wall are out of sight unless, of course, we turn our eyes towards them. This point on the eye-level is the point of sight. Do you remember how we found that the top of a jam-jar seemed to get wider as it was moved away from the eye-level, up or down ?

We only drew the square box in another lesson in one position—exactly opposite to us; but we are going to draw the book a little way on the left, so that we can see the front and the right-hand edges. It will be easier to try this position with a sheet of white paper first. Take another piece of paper to draw upon, and use the blunt-pointed pencil.



The open book drawn in pencil

Let us put the sheet of paper opposite to us first—that is easy to draw. The back line will be shorter than the front, so that the two other sides must slant. Lines like these below the eye slant upwards to the eye-level.

Now we will try with the paper on the right-hand side. We will draw the line nearest to us first, then the back line, shorter than the front; the little side lines slant upwards towards that point on the wall which is level with the eye.

One side has further to go—the side furthest away from us—so it must slant more than the side nearest to us.

Why do we make slanting sides to a sheet of paper which has all its sides quite straight ? It is because our eyes make them look slanting when the paper lies flat. If we made the lines all straight the paper would look as if it were standing on its edge.

Things opposite to us get smaller as they are pushed further off, and things on our right or left hand alter and get smaller, too, till they disappear quite out of sight. Now we will try to draw the sheet of paper on the left-hand side, and if we like we can make sheets of paper with white chalk on brown paper before we begin the book. Let us choose a good thick book, and one in which the pages will turn over easily and lie down when the book is opened. We will put it in front of us on the left-hand side, some distance away, and then with black and white chalk or pencil we will draw lightly and carefully the general shape of the part of the book lying on the table—not the thickness of of the leaves or the binding yet; just a single outline as we drew the sheet of paper, only the centre of the book must be drawn, too. The side nearest to us will slant a little, the centre line will slant more, and the one furthest away will slant most. All these lines slanting upwards, they would meet in the point on the eye-level if we lengthened them so far.

If this part is nicely drawn the rest is easy. We can then put in the thickness of the binding and the leaves, showing this only in front and on one side—we cannot see the other side—and then try putting in the shadow softly with the flat side of the pencil point. If we make shadow we must not let the outline show, but make it all one colour with the shadow. If we work in chalk we can put in the whiter part with white chalk, the darker with black, and the others with white used thinly.

LITTLE PICTURE-STORIES IN FRENCH

First line: French. Second line: English words. Third line: As we say it in English.

La bonne dit à maman que Jeannette a besoin de bottines neuves.
The nurse says to mamma that Jenny has need of boots new.
Nurse tells mamma that Jenny needs new boots.

Maman lui dit de nous prendre au magasin pour en acheter.
Mamma to her says of us to take to the shop for of them to buy.
Mamma tells her to take us to the shop to buy them

Nous sortons après le déjeuner. Nous sommes impatients de voir les magasins.
We set out after the lunch. We are impatient of to see the shops.
After lunch we set out. We are anxious to see the shops.

Nous entrons dans un magasin et la bonne dit : " Je désire voir des bottines."
We enter in a shop and the nurse says : " I desire to see some boots."
We go into a shop and nurse says : " I wish to see some boots."

Le commis nous en montre une paire, mais elles sont trop serrées.
The shopman us of them shows a pair, but they are too pressed.
The shopman shows us a pair, but they are too tight.

Le commis en apporte des autres et Jeannette tend son pied.
The shopman of them brings some others and Jenny tenders her foot.
The shopman brings some others and Jenny holds out her foot.

Tout à coup elle crie : " Regardez ! La petite souris ! " Elle a peur.
All at (a) blow she cries : " Regard ! The little mouse ! " She has fear.
Suddenly she cries out : " Look ! There is a little mouse ! " She is afraid.

La petite souris saute par-dessus la bottine et court derrière des boîtes.
The little mouse jumps by over the boot and runs behind some boxes.
The little mouse jumps over the boot and runs behind some boxes.

Nous éclatons de rire. Je pense que les filles sont très sottes.
We burst of to laugh. I think that the girls are very silly.
We burst out laughing. I think girls are very silly.

Enfin Jeannette choisit de jolies bottines, et la bonne paye la note.
At last Jenny chooses of pretty boots, and the nurse pays the bill.
At last Jenny chooses some pretty boots, and nurse pays the bill.

THE NEXT SCHOOL LESSONS BEGIN ON PAGE 2649.

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